

THE RELATIONSHIP OF SELECTED FACTORS
TO THE CONTINUANCE OF JUNIOR COLLEGE
GRADUATES AT SENIOR INSTITUTIONS

By
LELAND ROSS COOPER

A DISSERTATION PRESENTED TO THE GRADUATE COUNCIL OF
THE UNIVERSITY OF FLORIDA
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE
DEGREE OF DOCTOR OF EDUCATION

UNIVERSITY OF FLORIDA

June, 1964

ACKNOWLEDGMENTS

The writer wishes to acknowledge his indebtedness to the following for their assistance in the completion of this study: the supervisory committee, Dr. R. L. Johns, Chairman, Dr. Ralph Kimbrough, Dr. Robert Wiegman, Mr. Mell Atchley, and Dr. Douglas Scates; to Dr. Wilson Guertin for help with the statistical computations; to Dr. Robert Curran for assistance in the selection and use of a socioeconomic scale; to Dr. Leonard V. Koos who read the study and offered helpful suggestions.

The administrative and staff personnel at Palm Beach Junior College and at St. Petersburg Junior College gave valuable assistance in collecting the data. The Kellogg Foundation contributed financial support and encouragement to the project.

The writer is especially grateful to his wife, Mary Lee, and his daughter, Cathy, for their patience and understanding.

TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	ii
Chapter	
I. INTRODUCTION	1
Need for the Study	
The Problem	
Limitations	
Definitions of Terms	
Procedure	
II. BACKGROUND OF THE STUDY AND REVIEW OF THE LITERATURE	12
Philosophy of the Junior College	
The College Attrition Problem	
The Student	
The Community Junior College in Florida	
III. OBTAINING THE DATA	70
The Index from Occupations	
Education of Parents	
Grade Point Average at Graduation	
Financial Dependency	
Family Responsibilities	
Number of Semesters Enrolled	
IV. ANALYSIS OF DATA	97
Age at Matriculation	
Socioeconomic Status	
Father's Education Level	
Mother's Education Level	
SCAT (Verbal) Scores	
SCAT (Quantitative) Scores	
Final Grade Point Average	

	Page
Financial Dependency	
Family Responsibilities	
Number of Brothers and Sisters	
Number of Semesters Enrolled	
Number of Semester Hours Earned	
The Median Test	
Summary	
V. SUMMARY AND CONCLUSIONS	128
Summary	
Recommendations	
BIBLIOGRAPHY	137
APPENDICES	144
A. Item Code for Collection of Data	
B. Discriminant Function Coefficients for 12 Variables	
C. Data for Cases Used in Calculating Discriminant Function on 12 Indicator Variables	

CHAPTER I

INTRODUCTION

The present need for college educated people is great, and indications are that the need will be increasingly greater if present trends continue. In 1954 Wolfe indicated the likelihood that shortages of college graduates would exist for some years to come in the natural sciences, engineering, home economics, dentistry, medicine, nursing, business and commerce, school teaching, and college teaching, and, in addition, that there will be shortages in various other positions requiring people with college work beyond the bachelor's degree. He predicted that

the population will increase at a rapid rate for 20 or more years into the future. The members of that population have come to expect a rising standard of living with all that that implies in the way of additional goods and services. The total production necessary to meet these demands will require the services of many scientists, engineers, management experts, economists, and others.¹

The accuracy of this prediction has already been seen for the first half of the 20-year period, and a further pre-

¹Dael Wolfe, "The Present and Future Demand for Educated Persons," College Admissions (Princeton, N. J.: College Entrance Examination Board, Educational Testing Service, 1954), p. 12.

dition has been made by Tickton in regard to the trend. He has said that the generation ahead will see the population of the United States increase by at least 100 million, and "the national economy, pushed forward by automation and mechanization, is likely to be offering a declining number of jobs for unskilled young people (18-21) at a time when the number of these young people will be growing rapidly."²

A study by Kastner has demonstrated that over a 45-year period of full-time work, a two-year investment in a junior college education would result in net financial returns of \$55,605.60 for males and \$33,166.34 for females, an average annual return of \$1,235.68 for males and \$737.03 for females.³ Of the economic effect on the nation as a whole he says:

When the increased earning potential for those completing a junior college education is multiplied by 200,000, the number of high school graduates considered most talented academically who annually fail to continue their education at the college level because of insufficient funds, the product represents the loss to the national income resulting from the failure of these high school people to complete at least two years of college. In 1960 dollars this loss is approximately \$48 billion.⁴

² Sidney G. Tickton, "What's Ahead for Public Junior Colleges," Junior College Journal, XXXIV (November, 1963), 9.

³ Harold Henry Kastner, Jr., "Economic Implications of Community Junior College Education" (Doctoral dissertation, College of Education, University of Florida, 1962), p. 193.

⁴ Ibid., p. 206.

Frequently encountered in the literature dealing with the community junior college is the theme of several purposes of the institution. Foremost among these are: general education for all, the terminal-technical function, the academic or transfer function, and the adult education function. To these have more recently been added the community service function and the guidance function. Other purposes than these are important, but apparently most community junior colleges have accepted the above as part of their basic philosophy and have written them into their statements of philosophy and goals. If these are accepted as fundamental tenets which serve as guides for the operation of the college, then it would be logical to conclude that the achievement of these goals will be reflected in the students and in the community as a whole.

The transfer function is usually thought of as providing the work of the freshman and sophomore years, which would be followed by at least the junior and senior years at a four-year college. This function of the junior college has long been the one most familiar to the general public. Because it has been thought of as "preparation for advanced study," it has often been equated with the first two years of university education. Junior colleges have at times been criticized for an apparent overemphasis on the transfer

function, the basis for the criticism being that far too many students were being prepared for advanced study who would never go beyond the first two years. Steggert found that in Illinois, 69 per cent of all junior college curriculums were designed for transfer and only 31 per cent were designated as terminal.⁵ This emphasis on the transfer function appears in many cases unjustified on the basis of the proportion of graduates who pursue further study:

In most states only about half of those who originally declare they plan to transfer actually do continue with advanced study. In some states, such as Florida and Texas, the percentage is higher; in others, such as California, it is as low as 30 per cent.⁶

It might seem that most of these students who enroll as transfer students at a college could be expected to go on to the third and fourth years of study at a four-year college or university upon successful completion of their two-year program. From the evidence available, however, it does not appear that even the majority of the students who enter a transfer program at a junior college go on to a senior institution. In 1940 Bells concluded that of a group of freshmen entering a number of junior colleges in 1937, 75 per cent did

⁵ Francis X. Steggert, "Terminal and University Parallel in the Illinois Junior Colleges, 1951-52," College and University, XXVIII (January, 1953), 204-209.

⁶ Grace V. Bird, "Preparation for Advanced Study," The Public Junior College, Fifty-fifth Yearbook of the National Society for the Study of Education, Part I (Chicago, The University of Chicago Press, 1956), p. 80.

not continue their formal education beyond the sophomore year. However, only 34 per cent of the total number were enrolled in terminal programs.⁷

In a study of 17,627 students who entered 63 two-year colleges as regular students in the fall of 1952, Medsker found that only 33 per cent had transferred to a four-year institution by June, 1956. In the private institutions, 42 per cent transferred, compared with 33 per cent in the public institutions. Fifty-six per cent of those who were graduated from junior college transferred as compared with the 33 per cent of freshman entrants who transferred.⁸

Among the factors which appear to operate as direct influences on continuation in college are: lack of necessary money, distance from college, negative attitudes toward college, sex, place of dwelling (rural or urban), racial and religious differences, and type and quality of previous education.⁹ It should not be assumed that failure to continue in college is the result of any single factor. It is far

⁷ Walter C. Eells, Present Status of Terminal Education (Washington: American Association of Junior Colleges, 1941), pp. 60-62.

⁸ Leland L. Medsker, The Junior College: Progress and Prospect (New York: McGraw-Hill Book Co., Inc., 1960), pp. 90-98.

⁹ Dael Wolffe, "Restrictions on the Supply of College Students," College Admissions (Princeton, N. J.: College Entrance Examination, Educational Testing Service, 1954), pp. 24-25.

more likely to be due to the interaction of several factors, one or more of which may have a greater influence than the others. The decision may be closely related to such tangible factors as academic ability, family income, distance from a college, sex, race, religion, and social status.¹⁰ These factors can be dealt with statistically and the answers evaluated with some degree of assurance.

There is, however, a group of intangible factors which may be of equal significance, but which cannot be described in statistical terms. Among these factors are: "motivation of the individual, the nature of the school he attends, the influences colleges bring to bear, society's demands upon its young people at a given time, and the competition of various alternatives to a college education."¹¹

The intangible factors would doubtless provide valuable information if they could be defined and measured. However, the relationship of tangible factors to continuance in senior college has not as yet been fully analyzed and assessed. It is the purpose of this study to evaluate a number of these factors.

¹⁰ Ibid., pp. 24-25. Also see Byron S. Hollinshead, Who Should Go to College (New York: Columbia University Press, 1952), p. 42.

¹¹ H. J. Dillon, Early School Leavers: A Major Educational Problem (New York: National Child Labor Committee, 1949), p. 42.

Need for the Study

It is apparent that large numbers of students enroll in junior colleges with the intention of completing a two-year program there and then transferring to a four-year institution for the final two years of a baccalaureate degree. By the time of graduation from the junior college, a large percentage of these individuals have, for various reasons, changed their plans.¹² In the junior colleges, there appears to have been no study directed toward the identification of these students, or the description of them in terms of the data which are already available.

Considerable evidence is available which shows that a large proportion of high school graduates who could be considered likely to succeed academically do not go to any college. Guidance counselors at junior colleges indicate that a high percentage of their graduates fail to continue for reasons other than lack of intellectual aptitude. It is quite likely that the student or graduate does not himself know the reason, or complex pattern of causes, for his decision not to continue with his education. There is, then, the need for a better description of these two groups of junior college graduates, those who continue in a senior institution and

¹² Medsker, pp. 90-98.

those who do not. There is also a need to know how these groups differ statistically on certain factors which could be considered of significant predictive value.

In view of the unique nature of the junior college, the importance of the guidance function must constantly be kept in mind. If those who enroll in the junior college are to get the maximum assistance from the guidance departments, it is first necessary that students, who had intended to continue at a four-year college but failed to do so, be identified as completely as possible by the means available. Should it occur that there is only a small percentage of them, then the guidance departments can devote their time to other problems. If, on the other hand, the percentage is high enough to be of concern, then administrative measures may be necessary in order to deal more effectively with the guidance of this group.

The Problem

The problem for this study was to evaluate the predictive value of certain factors which it is believed tend to influence a junior college graduate to continue at a senior college.

Limitations

The study will be concerned with the graduates from Palm Beach Junior College and St. Petersburg Junior College. The data and the conclusions drawn from them will have primary relevance to these two institutions but may be typical of others.

Definitions of Terms

Continuing graduates--those graduates of the junior college who subsequently enrolled in a senior institution.

Junior college--a post-high school institution which offers the first two years of a university parallel curriculum as part of its total program.

Indicator--a variable which can in some way be measured and which suggests reasons for an individual's decisions.

Non-continuing graduates--those graduates of the junior college who had not enrolled in some institution at the time of the study.

Senior institution--a college or university which offers at least the baccalaureate degree.

Procedure

Palm Beach Junior College and St. Petersburg Junior College were chosen for study for the following reasons:

1. They are the two oldest schools in Florida's Community Junior College System.
2. They had the largest enrollments and the largest graduating classes from which to select a sample at the time of this study. In the 1959 and 1960 graduating classes from the two schools, there was a total of 584 individuals enrolled in courses which were the equivalent of the first two years in a four-year college program.

3. The records of these two junior colleges for incoming students are reasonably accurate and their procedures for collecting information are fairly well developed.

4. The counties of location are very similar in social climate as compared on the basis of an index developed by Gentry.¹³

The cases for the study consisted of the members of the June, 1959, and the June, 1960, graduating classes from both institutions who would have been eligible to continue at a senior institution. For the purpose of this study, these graduates were divided into two groups: (1) those who had enrolled in a senior institution at the time of the study, and (2) those who had not enrolled in a senior institution. Each of these groups was then further divided on the basis of sex. The data for the two junior colleges were combined at this point, and two comparisons were made. The continuing men were compared with the non-continuing men, and the continuing women were compared with the non-continuing women.

The data listed in the Item Code for the Collection of Data (Appendix A) were gathered for each individual, and an analysis was made by appropriate statistical techniques. The primary purpose of this analysis was to determine what differences between the continuing and non-continuing groups

¹³Gilbert Gentry, "The Relationship of Certain Cultural Factors to Initiative in the Local Support of Education in Florida" (Doctoral dissertation, College of Education, University of Florida, 1959), p. 159.

are most important and what factors tend to have the greatest association with the individual's decision. The kind and number of data used in this study have been determined, first of all, by what is available at the colleges. A considerable amount of information about the students was obtained from the registrars' offices and from the offices of student personnel. Some of the data were not in quantitative form when collected. In order for these items to be useful in the statistical analysis, they were quantified and the quantities regarded as data in the calculations. Among the latter are such items as father's educational level and chief means of financial support as a student. Primary occupation and education level of parents have been used by a number of researchers as indexes to the socioeconomic situation of the student. The various test scores were available in raw score and percentile rank form. The junior college grade point average was not available for all students at either college, but the necessary information was on file in the registrars' offices and the average was calculated from it by the writer.

The method of "discriminant function," as developed by R. A. Fisher, was used to find the best empirical weighted combination of variables to maximize the difference between the two groups.

CHAPTER II

BACKGROUND OF THE STUDY AND REVIEW OF THE LITERATURE

The students found in the different kinds of educational institutions reflect in various ways the distinctive character of the institutions. The institutions, on the other hand, tend to reflect the wishes of the society, or portion thereof, which they serve. An interest in understanding students--their behavior, aims, and motivations--requires an understanding of the institution itself.

The functions and purposes of the junior college are different in a number of ways from those of any other American institution. It emerged to fill a recognized but at first ill-defined need in the educational system. With the growth of the high school during the latter half of the nineteenth century there had been a growing concern with the role of the university in American education. As early as 1852, Henry Tappan, president of the University of Michigan had suggested that the work of the secondary departments of the university be transferred to the high schools.¹ Other univer-

¹B. A. Hinsdale, History of the University of Michigan, quoted in Walter Crosby Eells, The Junior College (Cambridge, Mass.: Houghton-Mifflin Co., 1931), p. 47.

sity presidents were interested in the kind of organizational changes that would relieve the university of the burden of providing preliminary preparation for scientific or professional study.

The first real separation of the upper and lower divisions of the university was made at the University of Chicago when it reorganized and opened in 1892 under President William Rainey Harper. The freshman and sophomore division, called at first the "academic college," was later designated the "junior college." While this is probably the first known use of the term "junior college," it applied at the time to the lower portion of the larger institution. At a later time President Harper himself used the term to designate institutions separate from the university.²

The institutions which emerged after the reorganization of the University of Chicago began to show an organizational structure similar to that of the first two years of the University. The influence of William Rainey Harper is seen in the establishment of Lewis Institute of Chicago in 1896 as the first private junior college, and in the two-year

²Walter Crosby Eells, The Junior College (Cambridge, Mass.: Houghton-Mifflin Co., 1931), p. 47.

upward extension of Joliet Township High School in 1902 to develop the first public junior college.³

It should be noted that in the years prior to the division of the University of Chicago there was little agreement as to what constituted college level work. As pointed out by Koos, a noticeable similarity existed in the courses offered by the various institutions which called themselves colleges. However, a number of high schools and academies offered curriculums at least on a level with the colleges and in some cases beyond them in difficulty.

On the whole, the academies and high schools of the period were much like the colleges and may be thought of as competitors of the colleges rather than as preparatory to them. As with the colleges, their curriculums were a composite of what we now regard as high school and college work. A correct interpretation would be that they served to popularize the level of education then considered collegiate, although in what degree it would be hard to say. Before they could go far in this direction, both institutions shifted into the preparatory relationship to the college they now hold.⁴

It could be said that the junior college existed, in a sense, for 40 or more years before the turn of the century.

³Leonard V. Koos, "Rise of the People's College," The School Review, LV (March, 1947), 142. Just when and where the term "junior college" was first used has not exactly been determined and probably cannot be, except as it appears in written records. A more complete discussion of the question can be found in Ralph R. Fields, The Community College Movement (New York: McGraw-Hill Book Co., Inc., 1962), p. 15.

⁴Ibid., p. 141.

if not as a distinct individual, at least as an amorphous infant in search of identity and room to grow.

The junior college movement gathered momentum during the first two decades of the twentieth century. With the leadership of Professor A. F. Lang of the University of California and President David Starr Jordan of Stanford University, the idea of postgraduate courses for high schools spread throughout the State of California. In 1907 a law was passed which permitted boards of education in California to set up such courses as would be similar to those in the first two years of the university. A number of institutions took advantage of the opportunity to establish what was the equivalent of a two-year upward extension of the high school

In other states, especially Illinois, Michigan, Minnesota, Iowa, and Missouri, the idea was beginning to spread.

A study conducted on a nation-wide basis for the Bureau of Education revealed at least seventy-six institutions by 1917 calling themselves junior colleges. Although a proportionately tremendous expansion of these institutions took place in the decade following this study, the study itself clearly revealed that the junior college was by 1918 already serving an important function in American life.⁵

⁵R. Freeman Butts and Lawrence Cremin, A History of Education in American Culture (New York: Henry Holt and Co., 1953), p. 425.

During the period beginning approximately at the end of World War I and ending at the beginning of World War II, the number of two-year colleges in the country more than tripled. Where there had been, at first, a larger number of privately supported institutions, there was a sharp rise in the number receiving public support. As the popularity of the public junior college increased during the thirties, their enrollment started a sharp climb that has continued until the present. At the same time enrollment in private junior colleges leveled off and finally diminished.

The opening of new junior colleges almost came to a standstill during the years of the Second World War. After the war, the trend upward in number of colleges and total enrollment continued. Figures from the Junior College Directory show a total of 702 junior colleges in the country for the year 1962-1963. Of these, 394 were public and 308 were private. The public junior colleges represent 56.2 per cent of the total number.⁶ Fields made an analysis of the types of junior colleges listed in the Junior College Directory giving data for 1958-1959. Of the 677 colleges located in the continental United States and its possessions, 400 were

⁶ Edmund J. Gleazer, Jr. (ed.), Junior College Directory of the American Association of Junior Colleges (Washington, D. C.: American Association of Junior Colleges, 1963). These figures were derived from the listings of junior colleges given in the Directory.

public institutions and 277 were private. The colleges listed according to types of control are as follows:

The private were listed under the following types of control: religious orders, churches, and Y.M.C.A., 182; nonprofit corporations, 92; proprietary, 2. The public colleges were labeled "state" or "territorial," (90); "county" or "joint county," (75); "local," (91); and "district," (142). One was listed as "Federal," and no information was given for one college. If "county," "local," and "district" are considered as local, this analysis indicates that over three-fourths (77.2 per cent) of the public junior colleges are responsible directly to a local governing body. Between one-fifth and one-fourth (22.8 per cent) are sponsored by a state, a territory, or the Federal government, and in some of these cases there is a cooperative agreement between the state and local representative group. It seems clear that the bulk of the public junior colleges are local colleges.⁷

There is every indication that the trends that have developed since the early part of the present century will continue for some time in the future. There is a marked inclination toward the establishment of more junior colleges with public support. These colleges are becoming more and more community-minded, accepting community service as a primary reason for being. The purposes of the colleges appear to be broadening in such a way as to assume more of the educational duties than in earlier times when the term "junior college" first came to be applied.

⁷ Ralph R. Fields, The Community College Movement (New York: McGraw-Hill Book Co., Inc., 1962), pp. 43-44.

Philosophy of the Junior College

From its early beginnings the philosophy of the junior college has changed considerably, especially in regard to the function of the institution. In the earlier stages of development, the junior college apparently had no other purpose than to prepare students for the upper divisions and graduate schools of the universities. It was thought desirable to get the first two years of college out of the way so that the university could go on with its true work, the dissemination of advanced knowledge and the discovery of new knowledge.

The approach adopted by many American universities during the late nineteenth and early twentieth centuries was patterned after the universities of Europe. Traditionally, the European universities assumed that when a student reached their doors he was ready to begin work in an area of specialization. The programs and philosophy which developed during this period represented the consummation of efforts during the last half of the nineteenth century to broaden the offerings of the college in such a way as to make more courses available and to give the student a much wider choice than had been possible with the earlier restricted curriculum.

With Harvard leading the way, especially during the presidency of Charles William Eliot, the colleges and univer-

sities made gradual but definite changes in response to many changes in the social and intellectual climate. Professor Louis Agassiz at Harvard helped lay the foundation for graduate schools and for the subsequent expansion of the undergraduate schools. According to Butts, graduate instruction has affected undergraduate departments in virtually all the colleges of the United States. Beginning probably about 1861, he says:

As specialized graduate courses were increasingly offered, the undergraduate courses increased in number, became more specialized, and eventually were opened alike to graduates and undergraduates, so that the elective principle necessarily came into wider and wider use.⁸

As a consequence of its traditional kinship to the first two years of the university, the image of the junior college as a preparatory school for the universities has persisted. Nevertheless, recognition of the junior college as a unique institution, performing tasks somewhat different from those of the universities came gradually. During the period of the 1920's, Thomas made what may have been the first definite statement of a modern philosophy of the junior college in terms of the functions which it should be expected to perform. These were the popularizing function, the preparatory

⁸R. Freeman Butts, The College Charts Its Course (New York: McGraw-Hill Book Co., Inc., 1939), p. 173.

function, the terminal function, and the guidance function.⁹ Recognition of a program of college level that could conceivably be completed in two years was a step in making the junior college legitimate as a separate and important part of the system of higher education. The other functions listed have also been accepted in recent years, but to them have been added others of equal importance.

It has been repeatedly pointed out that an institution such as the junior college cannot spring up de novo but grows and develops in response to the needs of individuals and the society which it serves. Its purposes then must be such as would best meet these needs. The structure of society itself is changing in response to such influences as the population explosion, increased urbanization, mechanization and automation, and mass communication media.

Reaction to these societal influences is seen in the expanding purposes of the junior colleges. Actually, each college will have its own goals and purposes, and they will not likely be identical to those found in any other school. However, there is general agreement that as a result of its development in response to the needs of society, the public junior college has distinct responsibilities.

⁹ Tyrus Hillway, The American Two-Year College (New York: Harper and Brothers, 1958), pp. 62-65.

Bogue approaches the problem of identifying the role of the community college in the following manner:

By examination of life situations, of identifiable problems that need solution, on national, state, and local levels, we arrive at conclusions regarding the basic functions of community colleges. They are guidance and counseling for all students and for the people of the community; general education for all students regardless of vocational objectives; technical and other vocational training, and that on a continuing basis, for students who will not advance to upper division collegiate studies; the further democratization of higher education by surmounting barriers of geography and family financial difficulties; the popularization of higher education by breaking down family traditions and creating greater personal interest and motivation; adult education and university-parallel studies for those students who should continue formal education.¹⁰

The preparatory or transfer function

For the reasons mentioned previously, the preparation of students for advanced or professional study remains an important part of the program in most public junior colleges. They have, in fact, often been criticized for an apparent overemphasis on the transfer function, the basis for the criticism being that far too many students were being prepared for advanced study who would never go beyond the first two years.

The transfer function must be considered of major importance to any state having junior colleges as a part of its system of higher education. Whether the stated goals of

¹⁰ Jesse Parker Bogue, The Community College (New York: McGraw-Hill Book Co., Inc., 1950), p. 76.

large numbers of students be realistic or not, all colleges will need to make provisions for those who aspire to a four-year degree or higher.

Another way of looking at the transfer function is to see it as a result of the larger goal of "democratization of higher education through the extension of greater opportunity to all youth." It is possible to consider the transfer function in this context because the colleges are placed at locations convenient to many who take freshman and sophomore courses and subsequently transfer who would otherwise not have gone to any college.

Community service function

So crucial is the idea of the public junior college as a community service agency that The President's Commission on Higher Education has suggested that the two-year college is "about as widely needed today as the 4 year high school was a few years ago" and suggested that the name "community junior college" be "applied to the institution designed to serve chiefly local community needs. It may have various forms of organization and may have curricula of various lengths, its dominant feature is its intimate relations to the life of the community it serves."¹¹ Fulfillment of an explicit obliga-

¹¹Commission on Higher Education, Higher Education for American Democracy: A report of the President's Commission on Higher Education (New York: Harper and Brothers, 1948), III, 5.

tion to its community can be equated with Thomas' "popularizing function." There is a natural overlapping here with both the transfer function and with the terminal function. In both the primary aim is to make higher education readily available to those who can benefit from it.

Ways in which the junior college can operate to improve the community are limited only by the imagination. Fields suggests the following as characteristics of programs committed to improvement of the community: the community college is locally supported and controlled; community resources are utilized; the college serves the community by offering educational opportunities; by assuring the availability of workers with specific competencies; by making the resources of the college available to the community, and by numerous other means; the college seeks to improve the community through research and planning.¹² Reynolds has selected and discussed community services in the following categories:

mutual aid for meeting college-community needs; community experience programs; community study and research problems; public affairs education; specialized community services including the subcategories of economic conditions, public education, health, cultural and recreational activities, and conservation; community development; community participation and leadership-training;

¹²Fields, pp. 81-86.

use of mass media of communication; public-relations programs; community use of school plant; and formal adult-education programs.¹³

Technical and vocational training

It is generally agreed that vocational opportunities exist in areas which require more education than is offered by the high school and not so much as required for a four-year degree. Programs which meet the needs of the student and the community in regard to semiprofessional training would make up the largest part of this function. Actually there is not complete agreement on what should be included in education for the semiprofessions. The lack of any clear-cut definition of the tasks in regard to them is pointed out by Henninger:

Too many of those schools currently showing interest in technical subject matter fail to distinguish between the content and philosophy required for an effective technical institute curriculum and the content and philosophy adequate for effective vocational-trade or "vocational technical" curriculums and shop courses.¹⁴

The contention that greater vocational opportunities lie in occupations which require higher educational levels is supported by evidence that trends over the past fifty years

¹³ James W. Reynolds, "Community Services," The Public Junior College, The Fifty-fifth Yearbook of the National Society for the Study of Education, Part I (Chicago: The University of Chicago Press, 1956), p. 144.

¹⁴ G. Ross Henninger, The Technical Institute in America (New York: McGraw-Hill Book Co., Inc., 1959), p. 5.

have been in the direction of an increasingly large proportion of the total work force in clerical, professional and technical, operatives, and sales work. Decreases are seen in the groups made up of laborers, farmers and farm managers, and farm laborers and foremen.¹⁵

In recent years, also the education level of the entire population has moved upward. Between 1940 and 1959 the per cent of the work force with between one and three years of college changed from 7.0 to 9.4. This change reflects the general rise in educational level where the per cent who attended high school four years went from 20.3 to 31.7 and the median number of school years completed rose from 9.3 to 12.0.¹⁶ Further, the number of persons in the labor force, considered in groups who might be of college age, actually decreased between 1945 and 1961 in spite of an increase in population. The number in the group 14 to 19 years of age decreased from 4,530,000 in 1945 to 3,370,000 in 1961, and the number in the 20 to 24 age group decreased from 5,760,000 to 5,063,000 in 1961.¹⁷

¹⁵ Lawrence G. Thomas, The Occupational Structure and Education (Englewood Cliffs, N. J.: Prentice-Hall, Inc. 1956), pp. 38-39.

¹⁶ U. S. Department of Commerce, Bureau of the Census, Statistical Abstract of the United States: 1961, Table No. 141, p. 110.

¹⁷ Ibid., p. 204.

Such trends as these apparently reflect the response of the population to societal influences, especially technological developments; and they portend even greater changes for the future, taking place even more rapidly. It can be said with assurance that some of the greatest pressures in the immediate future will result from the demand for higher levels of education in the technical-vocational areas.

General education

Though there is wide agreement as to the importance of general education in the junior college program, there is probably no question which is debated with more fervor and with less consensus than that of how the goals of general education should be achieved. Good defines general education as "(1) those phases of learning which should be the common experience of all men and women; (2) education gained through dealing with the personal and social problems with which all are confronted."¹⁸ The first task in dealing with the problem of general education is one of selecting those phases of learning agreed upon as important parts of the common experience of men and women and of establishing a set of goals for general education. A close kinship to the same problem as historically found in elementary and secondary schools

¹⁸Carter V. Good (ed.), Dictionary of Education (2nd ed.; New York: McGraw-Hill Book Co., Inc., 1959), p. 245.

permits the extension to the junior college of the information and ideas developed in public schools.¹⁹

One statement of the goals of education developed by a junior college group bears a close resemblance to the "Ten Imperative Needs of Youth" proposed by Stoddard²⁰ and the earlier "Seven Cardinal Principles of Secondary Education."²¹ This group proposed the following as areas in which the student should increase his competence:

1. Exercising the privileges and responsibilities of democratic citizenship.
2. Developing a set of sound moral and spiritual values by which he guides his life.
3. Expressing his thoughts clearly in speaking and writing and in reading and listening with understanding.
4. Using the basic mathematical and mechanical skills necessary in everyday life.
5. Using methods of critical thinking for the solution of problems and for the discrimination among values.
6. Understanding his cultural heritage so that he may gain a perspective of his time and place in the world.
7. Understanding his interaction with his biological and physical environment so that he may better adjust to and improve that environment.

¹⁹Edwin Everitt Potter, Jr., "An Analysis of Attitudes of Students, Teachers, and Administrators Toward General Education Programs of Selected Junior Colleges of Florida" (Doctoral dissertation, College of Education, University of Florida), pp. 38-52.

²⁰Alexander V. Stoddard, Education for All American Youth (Washington: Educational Policies Commission, 1944), p. 216.

²¹Potter, pp. 39-40.

8. Maintaining good mental and physical health for himself, his family, and his community.
9. Developing a balanced personal and social adjustment.
10. Sharing in the development of a satisfactory home and family life.
11. Achieving a satisfactory vocational adjustment.
12. Taking part in some form of satisfying creative activity and in appreciating the creative activities of others.²²

These are merely objectives and they have particular reference to one state, California; however, they are succinctly stated and they serve well to illustrate what Thornton has called "programs of education specifically designed to afford young people more effective preparation for the responsibilities which they share in common as citizens in a free society and for wholesome and creative participation in a wide range of life activities."²³

Guidance and counseling

Taking its impetus from the work done in the elementary and secondary schools, the junior college has accepted guidance, not as a separate program of the college, but as

²²B. Lamar Johnson, General Education in Action (Washington: American Council on Education, 1952), pp. 21-22.

²³James W. Thornton, Jr., "General Education," The Public Junior College, The Fifty-fifth Yearbook of the National Society for the Study of Education, Part I (Chicago, The University of Chicago Press, 1956), p. 118.

an integral part of the curriculum, the aims of the guidance program being the same as those of education itself.²⁴ The term "student personnel work" has gained widespread usage and is in fact a more inclusive term,

describing all services of the institution which are concerned with the individual welfare of the student. Under student personnel services are included guidance, housing, health services, placement, and most other institutional services except actual classroom instruction and the library.²⁵

In order to accept any such broad meaning of the term, it is necessary for a college to strive to make the concept of student personnel services "institution-wide." This necessarily implies an appreciation on the part of students, faculty, and administration of the goals of a truly comprehensive student personnel program. In addition, understanding is required on the part of people in the community to whom the concept may be new. The purposes of such a program as seen from the "student personnel point of view" have been listed as follows:

1. The student achieves orientation to his college environment, understanding the purposes of the college and the relationship between his own needs and desires and the facilities of the institution.

2. The student succeeds in his studies, acquiring the information, skills and attitudes presupposed in the purposes of the institution.

²⁴Hillway, p. 149.

²⁵Ibid.

3. The student finds satisfactory living facilities which contribute to the educational development of the student, in accordance with the goals of the institution.

4. The student achieves a sense of belonging to the college, establishing relationships with others that will make him feel valued and a part of the group.

5. The student must learn balanced use of his physical capacities, not only in terms of preventive medicine but also in terms of developing those skills and abilities he has to the point where they contribute the greatest amount of satisfaction to him and to others.

6. The student must progressively learn to understand himself and increase the insight he has into his own abilities and behaviors and incorporate this understanding into his long-range planning.

7. The student must learn how constantly to expand and develop his interests and learn to be aware of what his interest potential is.

8. The student must understand and use his emotions.

9. The student must learn to understand and control his financial resources.

10. The student must progress toward appropriate vocational goals. His vocational goals must be selected in light of his interests and abilities and his plans made in light of opportunities and requirements.

11. The student must develop individuality and responsibility.

12. The student must discover ethical and spiritual meanings in life.

13. The student must learn to live with others.

14. The student must progress toward satisfying and socially acceptable sexual adjustments.

15. The student must prepare for satisfying and

constructive post college activities, assuming community and professional responsibilities.²⁶

The areas of student personnel services will be taken up in a later section with particular reference to the junior college student and the identification of him physically, psychologically, and socially.

Adult education

Because of its location within the community it serves, the community junior college is in a position to offer unusual educational opportunities to those in the vicinity who might be considered "past college age." It is patently impossible to offer work at the college which would appeal to every adult in the community, and no attempt to do so is likely to be made. Actually there is no program offered which is more diverse than adult education. It can be in progress day or night. Courses can be credit or non-credit; they can be "needed" by the community or simply "wanted" by people who enroll; the instructors may be regular faculty or qualified members of the community who are interested. An idea of the diversity of subject matter in adult programs is shown in a study of 37 junior colleges reported by Medsker.

²⁶ A. J. Brumbaugh and Ralph F. Berdie, Student Personnel Programs in Transition ("American Council on Education Studies: Student Personnel Work," Series VI, No. 3; Washington, D. C.: American Council on Education, 1952), pp. 8-9.

In order of percentage of enrollment the categories of subject matter and the per cent of the total were: business (18), trade technical and industrial arts (17), language, communication arts, and humanities (15), social science (13), arts and crafts (8), mathematics (8), home economics: home-making, family living (7), natural science (5), recreational and physical education (4), undescribed courses in general education (3), architecture, landscape gardens, etc. (1), and police and fire training (1).²⁷ In this many faceted area of adult education enrollments have increased rapidly since World War II. According to Reynolds:

The 1955 Junior College Directory reports a total of 263,305 persons registered in adult-education programs in public junior colleges in the United States. This represents an increase of 120 per cent in adult-education enrollments in junior colleges over the number enrolled in 1949.

Another evidence of the rapid growth may be seen in the increased number of public junior colleges in the United States which reported adult-education enrollments. The 1949 directory listed 157 such junior colleges, representing approximately 48 per cent of the public junior colleges reporting.²⁸ By 1955, the number had increased to 77 per cent.

²⁷ Leland L. Medsker, The Junior College: Progress and Prospect (New York: McGraw-Hill Book Co., Inc., 1960), p. 74.

²⁸ Reynolds, The Public Junior College . . . , pp. 155-56.

The College Attrition Problem

In part because attention has been focused on the dropout problem in elementary and high schools, the extent of attrition in the colleges of the nation is not widely known. Hundreds of studies have been made which deal with the college dropout problem. The large majority of these, however, are concerned with individual schools; hence, the implications are more or less limited to a local situation.

Two major investigations conducted by agencies of the federal government are outstanding because of more concentrated effort and because the study population was large enough for the conclusions to have meaning for a larger area. Both of these studies dealt with the extent of college attrition and attempted to ascertain some of the reasons for students' leaving college before graduation.

The earlier of the government surveys was the McNeely study of 1939, which dealt with data collected from 15,535 students in 25 universities. It was pointed out in this study that there was an appreciable difference between gross mortality--those students who left the university during or at the end of the four-year period without receiving degrees--and net mortality--those who left the university and who did not later enroll in the same or another school to receive a degree. For all the universities studied, the gross mortal-

ity was found to be 62.1 per cent and the net mortality was 45.2 per cent.²⁹

The second government study, conducted by Iffert, showed dropout rates similar to those found by McNeely. Iffert found that "slightly fewer than 40 per cent of students entering higher educational institutions in the study graduated from the institution of original registration in normal progression--that is, in a 4-year period--and perhaps 51 per cent graduated from some institution during this period. The conclusion that nearly 60 per cent of the students in the study eventually graduated from some institution of higher education seems to be justified by the data."³⁰

The overall attrition rate of approximately 40 per cent appears to have some traditional standing. An analysis by Summerskill of 35 different studies that gave attrition rates for classes entering hundreds of varied colleges and universities from 1913 to 1962 led him to the conclusion that "apparently the attrition rate has not changed appreciably in

²⁹John H. McNeely, College Student Mortality, U. S. Office of Education Bulletin 1937, No. 11 (Washington: U. S. Government Printing Office, 1938), p. 104.

³⁰Robert E. Iffert, Retention and Withdrawal of College Students, U. S. Department of Health, Education, and Welfare Bulletin 1958, No. 1 (Washington: U. S. Government Printing Office, 1957), p. 20.

the past forty years,"³¹ and that while attrition rates vary widely among colleges--the range being from 12 per cent to 82 per cent in the 35 studies--for several decades about 40 per cent of college students have graduated on schedule and another 20 per cent have graduated at some college at a later time.³²

Evidence which he had collected led Iffert to conclude in 1956 that of all freshmen entering institutions of higher education approximately 11 per cent are casualties during or at the end of the first registration period; more than one-fourth leave the institution of first registration by the end of the first year; 15 per cent leave during or at the end of the second year; and fewer than 40 per cent of the students graduate from the institution of regular registration. In the junior colleges, the first-year mortality rate is higher than in four-year institutions. Of the group entering junior colleges in the fall of 1950, 40.5 per cent did not return for the second year.³³

³¹ John Summerskill, "Dropouts from College," The American College, ed. Nevitt Sandford (New York: John Wiley and Sons, Inc., 1962), Part V, pp. 630-31.

³² Ibid.

³³ Robert Earl Iffert, "Drop-Outs: Nature and Causes; Effects on Student, Family, and Society," Current Issues in Higher Education 1956, The Proceedings of the Eleventh Annual National Conference on Higher Education, Chicago, Ill., March 5-7, 1956 (Washington: Association for Higher Education), p. 94.

On the basis of the evidence known, Dr. Benjamin S. Bloom, University of Chicago, has estimated that about 50 per cent of the one million students who began college in 1962-1963 will not finish. Approximately 300,000 of these will drop out because of failure and 800,000 will leave for other reasons.³⁴

Many attempts have been made to establish causal relationships between attrition and various factors which might in some way be influenced by the college. McNeely saw a relationship between attrition and failure in work, financial difficulty, age at entrance, distance of the university from the home of the student, and place of lodging.³⁵

Type of institution and type of control appear to be significant in a consideration of the college dropout problem. Iffert's study demonstrated that the percentage of students graduating in normal progression was highest in technological institutions where 42 per cent of the men were graduated. In teachers colleges only 28.8 per cent completed the program. In the publicly controlled institutions only 33 per cent of the students completed the four-year program;

³⁴ Sidney C. Gould, "How Can We Help the Failing College Student?" High Points, XLV (February, 1963), 11.

³⁵ McNeely, pp. 105-106.

while in the privately controlled schools, 48 per cent were graduated.³⁶

Standing in high school graduating class and the kind of high school from which the student came have been shown to be related to persistence in college. A study of 2,462 students from 44 high schools enrolled in a large state university in the Middle West presented a median dropout figure of 58 per cent of the entering freshmen. Of the 42 per cent who stayed to graduation, a considerable difference was shown among the various high schools from which the students came. From one high school only 16 per cent were graduated from the university; while 59 per cent of the students from another high school were graduated.³⁷

Iffert recognized a significant relationship between standing in high school graduating class and length of survival in college. An example is seen in his statement that universities graduated 38.8 per cent of all their students in regular progression but they graduated 56.3 per cent of those who graduated in the top tenth of the high school classes and 52.1 per cent of those who graduated in the top fifth. On the other hand, only one in eight from the bottom fifth were graduated.³⁸

³⁶Iffert, Retention and Withdrawal . . ., p. 100.

³⁷Dan A. Fults and Bob L. Taylor, "The Staying Power of College Students," The Bulletin of the National Association of Secondary-School Principals, XLIII (October, 1959), 109-113.

³⁸Iffert, "Drop-Outs; Nature and Causes; Effects on student, Family, and Society," p. 97.

Summerskill found in his analysis of studies specifically concerned with the question that the average secondary school grades of college dropouts were lower than were those of graduates.³⁹

Alexander and Woodruff found that students entering college from larger secondary schools received higher social ratings than did those from smaller schools, and that there was a high correlation between social development and intelligence test scores.⁴⁰

Numerous investigations have found scholastic aptitude test scores related to subsequent attrition. A survey showed that in 16 of 19 studies of this problem the average aptitude test scores were lower for drop-outs than for graduates.⁴¹

On the other hand, an analysis of student attitudes in relation to student mortality at Temple University revealed that approximately 50 per cent of the students who withdrew felt that the university could have taken some action which would have kept them in school. The group being studied was a freshman class of 816 members. One and a half

³⁹ Summerskill, p. 634.

⁴⁰ Norman Alexander and Ruth J. Woodruff, "Determinants of College Success," Journal of Higher Education, XI (December, 1940), 484.

⁴¹ Summerskill, p. 635.

years after their entry, 40 per cent of the class had withdrawn. The withdrawal group was compared with a sample from the remaining college population on the factors of mental ability, occupational interest, personality and study habits, with the result that there was "a striking similarity between the samples and the groups from which they came."⁴²

And Adkins found no significant difference between freshman students who dropped out during the first semester of registration and those who completed the freshman year on six intellective variables: ACT tests, Mathematics, English, Social Studies, Natural Sciences, the Otis Self-Administering Test of Mental Ability, and High School Grade Point Average.⁴³

Several studies have demonstrated that dropouts tended to have significantly lower reading scores. Freehill analyzed dropouts on the basis of ten test scores--seven English and three ACE tests--and found that those who dropped out the first year were significantly lower on every category

⁴²Norman Gekaski and Solomon Swartz, "Student Mortality and Related Factors," Journal of Educational Research, LIV (January, 1961), 192-94.

⁴³Arlie Andrew Adkins, "Prediction of College Success at Middle Tennessee State College" (Doctoral dissertation, College of Education, University of Florida, 1963), p. 101.

of scores but were particularly deficient in reading level and total reading score.⁴⁴

A study of students at the University of Utah revealed a relationship, significant at the .05 level or above between persistence toward graduation and grade point average, predicted grade point average, high school average grade, social activity, scholarship as a source of school income and personal savings as a source of income.⁴⁵

Hanks found that freshmen who withdrew from the University of Arkansas had "1. Less scholastic aptitude as measured by the ACE Psychological Examination. 2. Less mastery of the English language as measured by the Cooperative English Test. 3. Lower high school cumulative grade-point averages."⁴⁶

There seems to be a clear and significant relationship between academic performance and persistence in college. An analysis of 35 studies of the relationship between college grades and attrition led Summerskill to the conclusion that:

⁴⁴Maurice F. Freehill, "The Cooperative English Test in Academic Counseling," College and University, XXIX (January, 1954), 252.

⁴⁵Frank B. Jex and Reed M. Merrill, "A Study in Persistence: Withdrawal and Graduation Rates at the University of Utah," Personnel and Guidance Journal, XL (May, 1962), 767.

⁴⁶Charles Harold Hanks, "A Comparative Study of Factors Related to Retention and Withdrawal of Freshmen Students at the University of Arkansas," Dissertation Abstracts, 1954, XIV, pp. 1171-72.

(1) a significant relationship does exist; (2) one out of three dropouts is the result of low or failing grades; (3) the probability of dropping out appears to vary inversely with grade point averages in the whole grade distribution at a given college; (4) students with poor grades, especially at the beginning of college, are highly likely to drop out.⁴⁷

In an experiment at Michigan State College to test the value of advising freshmen with poor grades to withdraw, it was found that 84 per cent of the 171 students so advised did not withdraw; of these, 11 maintained satisfactory records and 21 were finally graduated, many with lengthy records of warnings and probations.⁴⁸

Over a period of years there has been little difference in the rate of dropouts between men and women as shown in studies by Johnson,⁴⁹ Iffert,⁵⁰ and Cummings.⁵¹ It does not follow, however, that women withdraw for the same rea-

⁴⁷ Summerskill, p. 636.

⁴⁸ Paul L. Dressel, "Liberal Arts Students Advised to Withdraw," Journal of Higher Education, XIV (January, 1943), 43-45.

⁴⁹ Granville B. Johnson, Jr., "A Proposed Technique for the Analysis of Drop-Outs at a State College," Journal of Educational Research, XLVII (January, 1954), 382-83.

⁵⁰ Iffert, Retention and Withdrawal . . . , p. 17.

⁵¹ Edgar C. Cummings, "Causes of Student Withdrawals at Depauw University," School and Society, LXX (September, 1949), 152.

sons. It is probably true that fewer women drop out for academic reasons, but a larger number of women withdraw to get married. This was found to be true in studies by Iffert⁵² and Goble.⁵³

Efforts have been made to learn something about many facets of the dropout problem that are interrelated and more difficult to appraise. Motivation has intrigued various researchers. It involves not only motivation for continuing or withdrawing, but also reasons for attending college at all. Farnsworth dealt with a number of non-academic factors which contribute to success or failure.⁵⁴

While there are no reliable statistics on such a complex problem, there is reason to believe that in some institutions emotional conflicts may account for more than half of the dropouts.⁵⁵ Grace found that, among the many personality factors which contribute to emotional condition, independence,

⁵² Iffert, Retention and Withdrawal . . . , p. 106.

⁵³ Robert Irwin Goble, "A Study of the Student Drop-Out Problem at Miami University" (Doctoral dissertation, Indiana University), Dissertation Abstracts, 1957, XVII, p. 61.

⁵⁴ Dana L. Farnsworth, "Some Non-Academic Causes of Success and Failure in College Students," College Admissions (Princeton, N. J.: College Entrance Examination Board, Educational Testing Service, 1954), II, pp. 72-78.

⁵⁵ Dana L. Farnsworth, "We're Wasting Brainpower," NEA Journal, XLVIII (March, 1959), 42.

responsibility, and anxiety relate to college attrition.⁵⁶ Also, worry and anxiety, social adjustment, and non-conformity are all related to college attrition.⁵⁷ Ryan found a positive relationship between academic performance and "the degree to which certain moral and social values are accepted."⁵⁸

Financial considerations are important in the study of college attrition. Iffert's study revealed that the students' own financial difficulties ranked third in reasons given for discontinuing college, and family financial difficulties ranked fourth.⁵⁹ In 16 of 21 studies reviewed by Summerskill, finances were rated as one of the three most important factors.⁶⁰

Researchers are invariably plagued with a "complex of causes" which must be considered in dealing with the college

⁵⁶ Harry A. Grace, "Personality Factors and College Attrition," Peabody Journal of Education, XXXV (July, 1957), 39.

⁵⁷ Mervin B. Freedman, "The Passage Through College," Journal of Social Issues, XII, No. 4 (1956), 13-28.

⁵⁸ Francis Joseph Ryan, "Personality Differences Between Under-and-Over-Achievers in College" (Doctoral dissertation, Columbia University, 1951), Dissertation Abstracts, XI, pp. 967-68.

⁵⁹ Iffert, Retention and Withdrawal . . ., p. 91.

⁶⁰ Summerskill, p. 647.

dropout. Farnsworth⁶¹ and Iffert⁶² have pointed out the difficulty in dealing with delicately interrelated factors, but also the necessity for determining, insofar as possible, which factors are most important and with which something can be done.

While considerable research has been done on the reasons why students drop out of a four-year college, and some has been done on the junior college dropout, there appears to have been little or no research which dealt exclusively with the students who drop out between the sophomore and junior years and the reasons for their failure to continue. The lack of research is especially evident when the sophomore year is in the junior college.

The Student

The primary reason for making any study of students is to learn as much as possible about them in order to plan educational experiences which will be to their best advantage. That human personality is complex and that students are difficult of description is axiomatic. An attempt to develop a profile of the college student becomes a matter of

⁶¹ Farnsworth, College Admissions . . . , pp. 72-78.

⁶² Iffert, Retention and Withdrawal . . . , p. iv.

collecting as much information as possible and extrapolating useful concepts from what is known.

Knowledge about the students is also essential to knowledge about the institution itself. In regard to the relationship between the students and the institution, Young has said:

There are numerous determinants of institutional climate or atmosphere among which are financial resources, community relationships, images which people have of an institution, cultural context, educational demands, social sanctions, the faculty, the alumni, the administrative staff, and the governing board. Most educators would agree that the characteristics of students who attend an institution profoundly affect its character.

An institution may be more of a constellation of youth sub-cultures rather than a homogeneous whole; therefore, the relationship between student characteristics and institutional character is admittedly not a simple one Student characteristics may remain fairly constant over a period of time--giving the institution a continuing cast--or the public image may change, thus producing changes in the student body it attracts. This, then, in turn effects a gradual alteration in the essential characteristics of the institution . . . in a short span of 16 years, one institution was able to increase percentages of its freshmen from the top quarter of high school classes from 45 to 79. The change in academic ability of entrants must have significantly changed the character of the college.⁶³

In considering the physiological and psychological changes that take place as an adolescent develops into a mature adult, much of the literature has dealt with the idea

⁶³Raymond Young, "Improvement Through Introspection: Are Self Studies Essential?" Junior College Journal, XXXII, No. 1 (September, 1961), 28-34.

of development periods marked off by age boundaries. Actually college-age students do not mature at the same rate nor in the same ways, any more than do pre-school children or adolescents. Some can be said to have become adults earlier in the teens while others do not reach that stage of maturity until they are well into their twenties. Also, the student should be thought of as a unique individual who is operating in an area of awareness known as his "perceptual field." This is defined as "the entire universe, including himself, as it is experienced by the individual at the instant of action."⁶⁴

While it is recognized that a person becomes a unique individual actually before he is born, and that in his development individuality becomes the rule, there are many elements which he has in common with the family of man. An example is found in Maslow's theory of human motivation which is based upon the existence of needs. Though human beings have certain needs in common with others of the animal kingdom, they have other and higher needs such as belongingness and love, esteem, and self actualization which are peculiar to humans.⁶⁵

⁶⁴Arthur W. Combs and Donald Snygg, Individual Behavior (New York: Harper and Brothers, 1959), p. 20.

⁶⁵Abraham H. Maslow, Motivation and Personality (New York: Harper and Brothers, 1954), pp. 80-106.

With the elements that human beings have in common as a starting point, and keeping the unique nature of the individual in mind, it is possible to reach some helpful conclusion about young adults who are of the usual college age. The period of early adulthood is said by Havighurst to be "the fullest of teachable moments and the emptiest of efforts to teach."⁶⁶ It is within the age range from 18 to 30 that most degree-seeking college students are found. The developmental tasks which the young adult faces include: selecting a mate, learning to live with a marriage partner, starting a family, rearing children, managing a home, getting started in an occupation, and taking on civic responsibility.⁶⁷ In the case of college students, the attainment of learnings necessary successfully to accomplish the tasks is postponed at the time when motivation is higher than at any time during their lives. While many college students do marry, there are many obstacles to starting a family and settling down to participation in a satisfactory community life. The student who leaves his home and the familiar surroundings of his home community to attend college creates an even greater chasm between his own physiological and psychological maturity and the tasks of early adulthood.

⁶⁶ Robert J. Havighurst, Human Development and Education (New York: Longmans, Green and Co., 1953), p. 257.

⁶⁷ Ibid., pp. 259-64.

Psychologically the individual as a college student differs from himself as a high school student largely in the fact that his response patterns have become somewhat more fixed. He has been making the transition from adolescence to early adulthood without understanding what was happening to him. Allport, in his discussion of personality development, introduces the concept of "functional autonomy" which holds that adult motives are varied, "self-sustaining contemporary systems, growing out of antecedent systems but functionally independent of them."⁶⁸ Strongly emphasized in Allport's theory is this idea that motivation is continuous historically but is functionally contemporary.

Most of the high school graduates who enter college do so soon after they leave high school. Most are then about 18 or 19 years old, which places them in the period of transition between late adolescence and early adulthood. The period of late adolescence is marked by the establishment of stability in physical development. The embarrassing awkwardness of early adolescence is replaced by an assurance that comes from knowing how the body can be expected to perform. With this confidence in the body, there comes the desire to test the limits of the body in terms of endurance. They will also

⁶⁸ Gordon W. Allport, Pattern and Growth in Personality (New York: Holt, Rinehart and Winston, Inc., 1961), p. 227.

try "whatever they perceive as 'adult' pleasures--alcohol, tobacco, sex, and even dope."⁶⁹

Sex differentiation

There has long been a positive relationship between sex status and college enrollment. In recent years there have been approximately twice as many men as women enrolled in colleges around the country. An important trend is developing which shows a gradual increase in the ratio of women to men in college. In this regard, Pierson has said:

Several factors bear on the change in sex ratio, as well as the percentage of all youth who attend college: economic status of the common people, highways and proximity to college, increased vocational opportunity for women, more jobs requiring higher levels of education, broadening of college curriculums, increasing percentage of marriageable men who are on college campuses. College education is becoming a part of the American standard of living for both sexes.⁷⁰

Regardless of the change in ratio, there is still a considerably larger number of college eligible women than college eligible men who are not in college. Whatever their reasons for not going to college, women represent a sizeable amount of intellectual talent. In general, they earn better

⁶⁹ Ira J. Gordon, Human Development: From Birth Through Adolescence (New York: Harper and Brothers, 1962), p. 340.

⁷⁰ Rowland R. Pierson, "Age Versus Academic Success in College Students," School and Society, LXVIII (August 7, 1948), 94-95.

grades in high school than do the men, but fewer of them choose to go to college.⁷¹

In formal education, however, there has been and still is a lack of differentiation according to sex. Such differences in curricula as are made, even throughout college, usually have to do with vocational choice rather than sex role, *per se*. In regard to this Parsons has said:

One can certainly speak of a strongly established pattern that all children of the family have a "right" to a good education, rights which are graduated according to the class status of the family but also to individual ability. It is only in postgraduate professional education, with its direct connection with future occupational careers, that sex discrimination becomes conspicuous. It is particularly important that this equality of treatment exists in the sphere of liberal education, since throughout the social structure of our society there is a strong tendency to segregate the occupational sphere from one in which certain more generally human patterns and values are dominant, particularly in informal social life and the realm of what will here be called community participation.⁷²

Socioeconomic factors

In the complex matrix of society numerous factors appear constantly to be operating to determine the future of youth. In the Elmwood studies, Hollingshead found a close association between high school grades and social status of

⁷¹ Helen E. Davis, On Getting Into College (New York: American Council on Education, 1949), p. 17.

⁷² Talcott Parsons, "Age and Sex in the Social Structure of the United States," Personality: in Nature, Society and Culture, ed. Clyde Kluckhohn and Henry A. Murray (New York: Alfred A. Knopf, Inc., 1959), Part II, p. 365.

the family. Those students in the lowest five social ranks received the highest per cent of failing grades, while those in the highest ranks received the lowest per cent of failures. The same relationship was found to exist to some degree between social class and scores on the standardized intelligence test. Although the association between these factors was significant it was not high enough to account for the concentration of failures in the lowest class nor the relative absence of failures in the upper class.⁷³

The situation which appears to exhibit unjust discrimination against groups of lower social status is seen by Hollingshead as a function of the class system. The boys and girls in the upper classes are conditioned to respond positively to competition, to be aggressive in the search for success, and to place a premium on personal achievement. The family and environmental conditions of the lower classes, on the other hand, tend to condition the children to failure, frustration, and insecurity. There is also the strong suggestion that their position of prestige and power in the community permits parents in the upper classes to bring pressure against teachers and school officials in a manner that can hardly be distinguished from outright intimidation.⁷⁴

⁷³ August B. Hollingshead, Elmtown's Youth (New York: John Wiley and Sons, Inc., 1949), p. 175.

⁷⁴ Ibid., p. 176.

If the existence of a continuing relationship between such factors as test scores or high school grades and social class is acknowledged, then there should follow the possibility of using them as predictors of each other. Social class tends to mold the performance of an individual in school and to influence strongly the development of his personal goals, his attitudes, his aspirations, in fact, his total personality. Personality develops slowly and is slow to change. The problems of the near future are met in a manner consistent with a style of life which is founded in the first four or five years of childhood.⁷⁵ The style of life becomes more rigidly fixed with time, and by adulthood many decisions are made on the basis of it rather than upon the logic or truth of the situation.

The danger inherent in oversimplifying the prediction process to the point of using a single type of evaluation instrument such as a test battery or high school grades is pointed out by Fishman:

High school grades are, in fact, a summary of a life story. It is easy to forget this and to dismiss them as a single intellective variable when, in reality, they reveal in capsule form a very complex life pattern. We must not permit the crudity and simplicity of our index to mask the subtlety and complexity of the real-life phenomena. Our experimental designs must of necessity

⁷⁵Alfred Adler, Problems of Neurosis (New York: Cosmopolitan Book Corp., 1930), p. 48.

simplify nature but we must not then reify our simplification.⁷⁶

The percentage of qualified people who attend college and their success in college are related to income and to the social status of the family.⁷⁷ It was found by White that of the secondary school graduates who enroll in colleges

there is probably little difference in median I.Q.'s regardless of social class . . . a great reservoir of superior ability to do high grade academic work exists in the lower classes but for the most part is not directed in the institutions of higher learning.⁷⁸

This seems to substantiate the claim that social class has a considerable influence on a student's decision to go to college, and that the need to fulfill the expectations of parents in regard to social role is as important as the higher economic ability which goes with the higher social role. Economic ability is, in individual cases, the critical factor influencing a student to attend college. However, the lack of money does not appear to be an insurmountable barrier to students who are academically talented.

⁷⁶ Joshua A. Fishman, "Some Social-Psychological Theory for Selecting and Guiding College Students," The American College, ed. Nevitt Sandford (New York: John Wiley and Sons, Inc., 1962), Part VI, p. 677.

⁷⁷ Paul S. Burnham, "The Evaluation of the College Candidate," College Admissions (Princeton, N. J.: College Entrance Examination Board, Educational Testing Service, 1954), pp. 60-61.

⁷⁸ Clyde R. White, These Will Go to College (Cleveland: The Press of Western Reserve University, 1952), p. 36.

Educational level of parents

Studies in Arkansas and Wisconsin show a direct relationship between education of parents and the decision to enter college. This relationship tended to decrease as the student's ability, measured by the ACE Psychological Examination increased. The Wisconsin study showed that high school graduates' plans to attend college were more related to education level of parents than to their occupations.⁷⁹

Age and maturity

It has been repeatedly shown that students who have been in military service before entering college make as good or better grades than the nonveteran students. The assumption which has been drawn from this evidence has been that the differences are due to increased age and maturity. A study at Michigan State College to check this assumption revealed that age was of little significance as far as academic success was concerned, and that there was no combination of factors of sex, marital status, or status as veteran or nonveteran which was predominant in the students who made the highest grades.⁸⁰ Therefore, it is not possible to state

⁷⁹ Robert H. Beezer and Howard F. Hjelm, Factors Related to College Attendance, Department of Health, Education and Welfare (Washington: U. S. Government Printing Office, 1961), pp. 18-19.

⁸⁰ Pierson, p. 95.

with certainty that age and maturity are indeed factors which make a difference in the college student's academic success.

Academic performance

Low academic performance is an important factor in many a student's decision to drop out of college. It may be that level of performance can be traced back over a period of years in the life of an individual to discover the role of "self-concept." Constant failure tends to discourage the student all through grade school and high school. It is estimated that about 60 per cent of those who drop out before being graduated from high school do so because of academic failure or difficulty.⁸¹ Lynch found that in three Florida junior colleges--St. Petersburg, Palm Beach, and Pensacola--students who dropped out gave "low grades" as the reason of greatest importance for their failure to continue.⁸²

Academic ability

Measured intelligence as a factor in the decision to attend college has been the subject of numerous studies. The tests most commonly used in colleges and universities for the purpose of predicting an individual's chances for success in

⁸¹ Burton R. Clark, The Open Door College: A Case Study (New York: McGraw Hill Book Co., Inc., 1960), p. 34.

⁸² Donald Fryman Lynch, "An Analysis of Drop-Outs in Selected Public Junior Colleges of Florida" (Doctoral dissertation, The Pennsylvania State University, 1959), p. 101.

college are: The College Entrance Examination Board Scholastic Aptitude Test, The American Council on Education Psychological Examinations (one for high school students and one for college freshmen), and The Cooperative School and College Ability Test. All of these tests have shown some correlation with college success.

Other commonly used indexes of academic ability are rank in high school graduating class and high school grade average. No "best" index to academic ability can be pointed out because of conflicting conclusions reached in various studies. An investigation of rank-in-class to college grades, and secondary school averages to college grades, showed the secondary school grades to be the better index of probable performance in college.⁸³

A study by Hoffman at the University of Florida was designed to discover whether or not the state-wide Twelfth-Grade Test Battery actually provided an index of fitness to do university work, and further, to see if any measure or combination of measures could be selected which could be used with more success in prediction than the state-wide tests.

He concluded

that there is a real and usable correlation between honor-point averages as achieved in the University Col-

⁸³ Burnham, pp. 76-92.

lege and the scores which were made by these individuals when they were given the State-wide tests. This has been shown to be true for each of these tests in varying degree, as well as for the average of the percentile scores. The battery, then, does constitute a predictor of academic success which, within limits, possesses considerable reliability.⁸⁴

Academic aptitude is often taken as the most important of student characteristics. By whatever measure is used, a great disparity exists among college students in general in academic ability. Among junior college students the range of abilities is even greater. Medsker found that the mean aptitude of freshmen entering four-year colleges as measured by the 1952 ACE test or an equivalent score was 13 points higher than for freshmen entering two-year colleges; however, for the two-year and four-year colleges combined the range of ability was considerable. Approximately 30 per cent of the students entering two-year colleges made scores above the mean of the students entering four-year colleges, and 16 per cent entering four-year colleges made a score of 68 or less, the score one standard deviation below the mean of the group entering two-year colleges.⁸⁵

⁸⁴ Charles A. Hoffman, "A Study in Predicting Academic Success" (Doctoral dissertation, College of Education, University of Florida, 1958), p. 129.

⁸⁵ Medsker, pp. 30-40.

Some intangible factors

Beyond the range of the tangible and measurable factors such as test scores and grade point averages lie the many intangible factors which must be given consideration. These factors are often so interrelated and so complex as to defy analysis. The challenge to engage in changing, through education, even the basic norms of a cultural system is a monumental one. The social milieu in which the student's interests, attitudes, and personality develop is of importance in understanding the student. The intricacy of the social setting requires as close an examination as possible of the product--the student himself.

Attitudes and values

The student takes to the college with him a set of attitudes and values which have been years in the forming. Operating to form these are all the conditions of his environment throughout his life. Most important are the home, the school, and his peer group. A study by Coleman of the climate of values in nine public high schools reveals that students believed success in school--to be in the "leading crowd"--depended more on such things as "being a good athlete," being pretty or good-looking, having good clothes and having a good reputation than upon academic success.⁸⁶

⁸⁶ James E. Coleman, "Academic Achievement and the Structure of Competition," Harvard Educational Review, XXIX (Fall, 1959), 330-51.

. . . the conflicting feelings of adolescents about scholastic success, privately wanting to succeed and be recognized themselves, but (in most adolescent groups) publicly making fun of the success of others, and disavowing interest in scholastic success. Thus it is not only that scholastic success counts for little in the adolescent culture; extra effort devoted to scholastic matters often counts negatively, and is discouraged.⁸⁷

The persistence of attitudes that develop during the high school years and before has been pointed out by Jacob, who suggested that values and attitudes not only change little during the college years, but become more firmly entrenched and "fewer seniors espouse beliefs which deviate from the going standards than do freshmen, as a result of which the graduates can fit comfortably into the ranks of college alumni."⁸⁸

Though often quoted, Jacob's book is not without its critics. Riesman has noted that "Jacob's view of students may be over censorious" and "that Jacob's emphasis on uniformity among college graduates probably tends to obscure the fact that colleges make some differences, for college graduates differ in important ways from the non-college elements

⁸⁷ Ibid., p. 340.

⁸⁸ Phillip E. Jacob, Changing Values in College (New York: Harper and Brothers, 1957), p. 4.

of the population, even though these differences may not be marked."⁸⁹

Although there appear to be considerable differences in "attitudinal atmosphere" among various institutions, The Cornell Values Study, conducted by Goldsen and others, showed a great deal of uniformity among a large number of college students on their answers to attitudinal questions. The authors of this study were struck by two themes found on the American campuses. "The first is what seems to be a remarkable absence of any intense or consuming political beliefs, interests or convictions on the part of college students.

The second is extreme political and economic conservatism."⁹⁰

The authors found it necessary to qualify the foregoing statement in light of other findings about student attitudes.

The generalization, however, that college students we studied are, by and large, withdrawn from political and economic issues and uninvolved in them, conceals certain complexities which are often overlooked. For example, the present study finds that their economic and political beliefs are quite differentiated. They avoid identifying themselves with a political party label of any kind, preferring to think of themselves as independent voters. Many who agree with the most extreme clichés of laissez-

⁸⁹Harold Webster, Mervin Freedman, and Paul Heist, "Personality Changes in College Students," The American College, ed. Nevitt Sandford (New York: John Wiley and Sons, Inc., 1962), Part VII, p. 825.

⁹⁰Rose K. Goldsen *et al.*, What College Students Think (Princeton, N. J.: D. Van Nostrand Co., Inc., 1960), p. 97.

faire economic philosophy, nevertheless accept important inroads on a strictly conservative position. Support for humanitarian and welfare measures cuts across liberal as well as conservative campuses and subgroups and across the lines of social class. The prevailing climate of opinion throughout the campuses we studied favors tolerance of racial and religious minority groups and accepts in principle the basic assumptions of democratic government. Outside the social subsystems on the campus which explicitly reinforce conservative norms and values, the students register liberalizing social influences.⁹¹

Influence of parents

There is a relationship between educational level of parents and the educational aspirations of young people. Various studies have pointed out the correlation between the two for high school students and for college students. A study of the educational background of the student's parents at Port Huron Junior College revealed that 47.6 per cent of the fathers and 36.6 per cent of the mothers were not high school graduates; 48.4 per cent of the fathers and 60.4 per cent of the mothers were high school graduates; 15.37 per cent of the fathers and 15 per cent of the mothers had attended college for one year or more; 11.3 per cent of the fathers and 11.1 per cent of the mothers were college graduates.⁹²

⁹¹ Ibid., pp. 200-201.

⁹² James C. Browning, "Research Studies and Surveys--Port Huron Junior College," Junior College Journal, XXXII, No. 1 (September, 1961), 44-46.

Such data tell something of the possible influence of the parents on the student. There are other and perhaps more important characteristics of parents about which little is known. It may be that these may be much more revealing and more useful to study than the factors which can be quantified.

There is no question that the personality of each parent plays a significant part in the total development of each child. The environment of the home contributes directly to the development of the child's personality throughout a good portion of his life--often into adulthood. Parental influence can be classified as positive or negative, but it is not likely to be indifferent. If the parent-child relationships are unsatisfactory the effects on the child will likely be patterns of unacceptable behavior. Langford and Wickman have said that "most faulty parent-child relationships are not due to stupidity, ignorance, or a puckish perverseness, but are related to the parent's own personality structure, emotional conflicts, biases and prejudices, and past experiences."⁹³

⁹³ W. S. Langford and K. M. Wickman, "The Clinical Aspect of Parent-Child Relationships," Mental Hygiene, XXXIV, 1948, pp. 80-88, cited in Louis G. Thorpe and Allen M. Schmuller, Personality: An Interdisciplinary Approach (Princeton, N. J.: D. Van Nostrand Co., 1958), p. 154.

Other home influences

In addition to the influence of the parents, the family group is said to have a personality of its own. In the words of Wattenberg:

Just as each individual has a unique personality, so too does a family group. Each has its own characteristics and its own idiosyncracies. Some are tightly knit; others are expansive. In some, life is sedate; in others, it is helter-skelter. Some are proud; others humble. The general tone of the group affects all members, and is clearly apparent in the children during the years in which they approach adulthood.⁹⁴

The "whole-group" life of the family is influenced by the atmosphere and morale established, role distribution between parents, family life programs and routines, discipline, relationships among siblings, position in the family, and the presence or absence of grandparents or other relatives in the family group.⁹⁵

Peer group influence

It is inevitable that the peer group or "crowd" of which an individual is a member will change when he begins his work in college. If he attends a community college, the change may be less abrupt. His living in the same community will bring him into contact with his friends from the high school. Even then, a number of the high school crowd will

⁹⁴ William W. Wattenberg, The Adolescent Years (New York: Harcourt, Brace and Co., 1955), p. 164.

⁹⁵ Ibid., pp. 163-183.

attend senior college or will marry and withdraw from the company of the junior college student. Others will take jobs, possibly in different locations, and likewise withdraw.

During the high school years, the influence of peer groups, organized and informal, is profound. At certain stages of development the individual is likely to try to enhance his position in the group, even if it means conflict with adult authority. Adolescents feel very strongly the need to belong to some group, gang, or organization. Of this need for acceptance Ruth Strang has said:

During adolescence the "peer-culture" tends to exert a greater influence than the family or school. This influence may be beneficial to adolescent development; or, as in the case of delinquent gangs, it may be extremely harmful. Much attention has been given to helping adolescents gain status in their group. More attention should be given to teaching them how to resist group pressures whose direction is undesirable.⁹⁶

To say that to the adolescent the peer culture is highly important is not to imply that group membership is not important in later years. On the contrary, Homans has pointed out that group membership allows man to maintain his equilibrium. He said:

If his group is shattered about him, if he leaves a group in which he is a valued member, and if, above all, he finds no new group to which he can relate himself, he will, under stress, develop disorders of thought, feel-

⁹⁶ Ruth Strang, The Adolescent Views Himself (New York: McGraw-Hill Book Co., Inc., 1957), p. 312.

ing, and behavior. His thinking will be obsessive, elaborated without sufficient reference to reality; he will be anxious or angry, destructive to himself or to others; his behavior will be compulsive, not controlled; and, if the process of education that makes a man easily able to relate himself to others is itself social, he will, as a lonely man, bring up children who have a lowered social capacity. The cycle is vicious; loss of group membership in one generation may make men less capable of group membership in the next. The civilization that, by its very process of growth, shatters small group life will leave men and women lonely and unhappy.⁹⁷

The Community Junior College in Florida

The present system of public community junior colleges in Florida developed in response to a demonstrated need for an institution which would provide educational opportunities for youth who were unable to attend the universities for various reasons and who were unable to find satisfactory employment in their own communities.

Palm Beach Junior College was established in 1933 through the efforts of an advisory committee consisting of representatives of local civic organizations. St. Petersburg Junior College began as a private institution in 1927 with the encouragement of public school officials. In 1947, operation of the college was transferred to the Pinellas County Board of Public Instruction. These two colleges

⁹⁷ George C. Homans, The Human Group (New York: Harcourt, Brace and Co., 1950), p. 457.

are the oldest in Florida's system of community junior colleges.⁹⁸

A new life came to the junior college movement in the state through two legislative actions. In 1947 the Minimum Foundation Program was established to provide a minimum financial support for the education of all the children of school age. The need for junior colleges was recognized and provisions were made for their development with some local support and with local control through the county school systems. In 1955 the legislature established the Community College Council to be given the responsibility for developing plans for the community junior college system in the state. This legislature also received favorably and gave attention to a report by the Council for the Study of Higher Education in Florida.⁹⁹ This report made specific recommendations for the establishment of community junior colleges and stated the roles of junior colleges and senior colleges in providing educational opportunities for between 106,000 and 116,000 people expected to be in college in 1970.

⁹⁸ "The Community Junior College in Florida's Future," Report to the State Board of Education by the Community College Council (Tallahassee, Fla.: Florida State Department of Education, 1957), p. 24.

⁹⁹ Ibid., p. 25.

The growth of the community junior college system in the state has been rapid. By the 1959-1960 school year, 21 schools had been established. By the 1961-1962 year, four new schools had been begun, making a total of 25. The 1963 Legislature approved the establishment of four more to bring the total to 29. Total enrollment in the public junior colleges increased from 5,444 in the fall of 1957 to 38,210 in the fall of 1962, an increase of 700 per cent. The total enrollment in the fall of 1963 was 50,051.

The most comprehensive study of the students in Florida's public junior colleges at the time of this writing was done by The Task Force on the Junior College Student and completed in 1962. The goals of the task force were to accomplish the following:

1. Define the nature of the junior college student in Florida.
2. Describe student personnel services now available.
3. Evaluate student personnel services now available.¹⁰⁰

Among the findings of the Task Force in regard to the nature of the junior college student were these:

¹⁰⁰ "Florida's Community Junior Colleges: Their Contributions and Their Future," A Report by the Task Force on the Junior College Student (Tallahassee, Fla.: State Junior College Advisory Board, September, 1962), p. 24. (Mimeo-graphed.)

Seventy-four per cent of the students enrolled in Florida's publicly supported community junior colleges earned total scores which would have qualified them to have entered the publicly supported universities of Florida.¹⁰¹

A total score of 200 was the minimum score necessary for unqualified admission until September, 1962.¹⁰²

An analysis of the age range of students enrolled in community junior colleges revealed that 69 per cent were between 16 and 22 years of age; 7 per cent were between 23 and 25 years of age; about 16 per cent were 30 years of age or older. Twenty-six per cent of the students reported that they were married.¹⁰³

An examination of the data concerning the families of the students in Florida's community junior colleges showed the following characteristics:

. . . 23 per cent of the students come from families in which the principal wage earner is classified in the "professional, technical, and kindred worker" category. Twenty-three per cent come from families in which the principal wage earner is in the "manager, official, proprietor except farm" category. Only 14 per cent of the students come from homes in which the principal wage earner is in one of the four lower occupational levels.¹⁰⁴

Thirty-five per cent of the students had no brothers or sisters, 50 per cent had one or two siblings, and 15 per

¹⁰¹ Ibid., p. 2.

¹⁰² Ibid.

¹⁰³ Ibid., pp. 3-4.

¹⁰⁴ Ibid., p. 3.

cent were from homes in which there were three or more siblings.¹⁰⁵

With regard to the education level of parents, the study revealed that:

Forty-six per cent of the students' fathers (39 per cent of the mothers) had less than a high school education. Twenty-five per cent of the fathers (34 per cent of the mothers) were high school graduates, but had no college education. Seventeen per cent of the fathers (18 per cent of the mothers) had some post-high school education but did not complete four years of college. Six per cent of the fathers (five per cent of the mothers) completed four years of college. Six per cent of the fathers (one per cent of the mothers) had post-baccalaureate education.¹⁰⁶

The information in the Task Force study was found to be similar in some respects to data found in other states. In general, students in Florida's community junior colleges appear to resemble rather closely the students of similar colleges in other states on the factors considered.

¹⁰⁵ Ibid.

¹⁰⁶ Ibid.

CHAPTER III

OBTAINING THE DATA

The data used in the comparison of the continuing and non-continuing junior college graduates came from the student personnel folders kept in the offices of the registrars in St. Petersburg Junior College and Palm Beach Junior College. Only those graduates were included who had enrolled in a college transfer program. For each graduate the information was recorded on 25 items on the data collection sheet. (See Appendix A.)

As the records were checked and the information recorded, a notation was made on the data sheet of the four-year institution or institutions to which the junior college graduates had requested that transcripts be sent. Letters were sent to the registrars of these 83 institutions asking them simply to state whether or not the student or students listed had entered their institutions. Eighty-one of the 83 registrars replied, and the two schools from which no reply was received involved only two of the graduates. The graduates were divided into two groups: the ones who did enroll in a four-year college or university, and those who did not.

During the process of collecting the data, the writer made an attempt to record the information on each of the 25 indicators for every individual; however, the information was not recorded for many graduates on the following variables: Rank in High School Graduating Class, A.C.E. Psychological Examination, Cooperative English Test, Cooperative Social Studies Test, Cooperative Mathematics Test, and the total percentile score on these four tests. Therefore, these variables could not be used. Certain other variables were judged to be of not enough importance to include in the analysis or not suitable for statistical treatment, so they were also excluded. These were: Mother's Primary Occupation, Date of First Matriculation, Parents' Place of Birth, and Veteran or Non-Veteran Status. Finally, the 12 indicators were selected which were most relevant to the problem and for which the data were most complete for the groups being studied. Since complete information was essential for all the variables and for every individual to be included in the analysis, those data sheets with incomplete information on any of the 12 variables were removed. The total population on which the statistical analysis was made consisted of 253 men and 166 women, a total of 419 individuals.

The following 12 variables were selected as being appropriate for comparison by statistical means:

- B. Age at Matriculation
- D. Father's Primary Occupation
- F. Father's Education Level
- G. Mother's Education Level
- L₁ Cooperative School and College Ability Test
(Verbal)
- L₂ Cooperative School and College Ability Test
(Quantitative)
- M. Final Grade Point Average
- N. Chief Means of Financial Support as Student
- O. Marital Status as Sophomore
- P. Number of Brothers and Sisters
- Q. Number of Semesters Enrolled
- R. Number of Semester Hours Earned

The data used in this study provide information which can be used with some degree of assurance in the construction of a socioeconomic index. These are "parents' occupations" and "parents' educational level." While there is considerable doubt that socioeconomic status can ever be measured accurately or even that "socioeconomic" is a measurable value, numerous attempts have been made to develop scales that would give numerical values to categories of occupations and educational levels.

It is recognized that neither of these indicators will give, either singly or in combination, the best possible index of socioeconomic condition. However, these two in combination, with the possible inclusion of income, have been widely used where measures were needed for statistical study of populations for which this information is available from public records.

The Index from Occupations

The socioeconomic index used in this study evolved over a period of years from a study started by Cecil C. North and Paul K. Hatt of the "prestige of occupations."¹ Following up on a study by Morpheus Smith in 1943, North and Hatt in 1945-1946 designed a study of occupational prestige that led to the NORC (National Opinion Research Center) Study. In March, 1947, a survey was conducted under the joint sponsorship of NORC, The President's Scientific Advisory Board, the College Study in Intergroup Relations at Wayne University, and the Graduate School of Ohio State University.

The NORC-North-Hatt occupational prestige scores served as a basis for numerous studies dealing with occupational status. But in a number of instances the NORC-North-Hatt scores did not prove adequate for the reason that scores were available for occupations of less than half the labor force. The development of a socioeconomic index for all occupations was carried out through Project RG-5667, "Occupational Classification for Vital Statistics Use," with the aid of a research grant to the University of Chicago from the

¹A complete description of the socioeconomic index used in this study is found in Albert J. Reiss, Jr., Occupations and Social Status (New York: Free Press of Glencoe, 1961), pp. 109-161.

United States Public Health Service. The new index then was to represent each of the occupations in the detailed classifications of the 1950 Census of Population. As defined by Duncan, this index was to have "both face validity, in terms of its constituent variables, and sufficient predictive efficiency with respect to the NORC occupational prestige ratings that it can serve as an acceptable substitute for them in any research where it is necessary to grade or rank occupations in the way that the NORC score does but where some of the occupations are not on the NORC list."²

The method selected to develop a socioeconomic index for all occupations makes use of measures of educational level and income level. There was considerable evidence to show that these variables could be used in combination to estimate an occupation's "prestige." The major purpose for the development of the scale was not to predict unknown variables but to construct from information found in the 1950 census a graduated rating scale for occupations to be used in future research which required a system of stratification.

The Socioeconomic Index for Occupations in the Detailed Classification of the Bureau of the Census: 1950 is given in three forms, either of which could be used in statistical analysis. The one selected for this study ranks on a scale

² Ibid., p. 115.

with a range approximately between 1 and 100. This scale makes for ease of computation but its use offers the possibility of confusion with percentile rank. It is actually a ranking of occupations in relation to each other on the basis of prestige and is not related to the number of individuals in each group.

Students of social stratification are in general agreement that the occupation of the husband is more likely to reflect the socioeconomic status of the family than is that of the wife. Although there is an increasingly large number of working wives, it is still true that the occupations given for most mothers is "housewife." Hence the occupation of the father only was used in deriving the socioeconomic index for the family.

Education of Parents

Educational level of parents was available from the application questionnaire in a form that allowed its stratification into four levels. The lowest group in education comprises those who have not completed high school; the next higher level, those who were graduated from high school; the third higher level, those who had some college but were not graduated; and the highest category was made up of those who were graduated from college.

It would have been desirable to have had information permitting further stratification of the group with less than high school level, as well as those whose formal education was extended to postgraduate work and advanced professional degrees. As this information was not available, it was necessary to use the four-point scale which discriminates at least among the parents with higher levels of education.

1	2	3	4
Less than high school	Graduated from high school	Some college	College graduates

Grade Point Average at Graduation

Grade points at both junior colleges being studied were awarded according to the same scale. A student received four grade points for an "A," three for a "B," two for a "C," one for a "D," and none for an "F." Generally speaking, the range in grade point averages was between two and four. It had not been the practice of the junior colleges to calculate exactly the averages for every graduate in 1959 and 1960; therefore, it was necessary for the writer to calculate averages from the grades and semester hours attempted. Also, as a result of a change of policy at both institutions in regard to the inclusion in the grade point average of hours attempted but not passed, it was necessary to make the decision to do

all calculations in the same way. Thus, only the semester hours passed were used in calculating averages, and the figures are slightly higher than if the failing grades had been included.

The Cooperative School and College Ability Tests were designed to estimate the capacity to do school work at the next higher level. "The two functions chosen for measurement, verbal and quantitative, presumably relate closely to skills which are essential to success in school and college."³

Scores on the Cooperative School and College Ability Tests were recorded in two or three forms for the students who took it. One form was the raw score which, because of the equating program with which the tests were used, cannot be interpreted directly. All interpretations begin with the three digit converted scores which are taken from conversion tables on the reverse side of appropriate SCAT scoring keys. In a number of cases there were also recorded percentile ranks for each of the converted scores.

For the purposes of the present study, the converted score was the only one of the three forms which could be used, since it was the only form which appeared on the record

³ Oscar Krisen Buros (ed.), The Fifth Mental Measurements Yearbook (Highland Park, N. J.: The Gryphon Press, 1959), p. 322.

of every student for whom SCAT scores are recorded. Converted scores are given for the verbal and the quantitative parts of the test, as well as the total score for the two.

Financial Dependency

On his application for admission to the junior college, each student was asked to indicate the source or sources from which he expected to receive his financial support for college and to indicate the approximate portion from each. The categories to be used were: (1) parent, (2) other relative, (3) personal savings, (4) personal earnings while in college, (5) scholarship or loan fund, and (6) other sources. In order to quantify the information thus collected, a scale of financial dependency was constructed which allowed for the arrangement of responses according to the degree to which the student was dependent upon some sources other than his own work or savings. If neither of the categories was listed, number 5 on the scale was recorded.

1	2	3	4	5
all self	3/4 self	1/2 self	1/4 self	all parent or other relative or other source
	1/4 other sources	1/2 other sources	3/4 other sources	

Family Responsibilities

The student's own responsibilities as a husband, wife, or parent were indicated in answer to a question regarding his marital status and number of dependents. A scale was constructed which placed the individual on a scale from 1, with no family responsibilities, to 4, if married with four or more dependents.

	1	2	3	4
single	married 2 dependents	married 3 dependents	married 4 or more dependents	

Number of Semesters Enrolled

The number of semesters enrolled before graduation was considered to be of some importance in determining whether or not the student had been attending full time, and if not, approximately what proportion of a full-time load he had carried. The smallest number for this variable is one, since no student would have been able to complete the requirements for graduation unless he had registered for and completed one semester. The writer arbitrarily decided to count as a "semester enrolled" only the semesters for which the student completed at least two courses for credit.

A summary of the data according to distribution in the various categories follows in Tables 1-20.

TABLE 1

DISTRIBUTIONS OF JUNIOR COLLEGE GRADUATES ACCORDING
TO AGE AT MATRICULATION (MEN)

Age at Matriculation	Continuers	Per Cent of Total	Non-Continuers	Per Cent of Total
18 and under	136	69.39	34	59.65
19 - 20	17	8.67	12	21.05
21 - 25	38	19.39	8	14.04
26 - 29	2	1.02	1	1.75
30 and over	3	1.53	2	3.51
Total	196		57	

TABLE 2

DISTRIBUTIONS OF JUNIOR COLLEGE GRADUATES ACCORDING
TO AGE AT MATRICULATION (WOMEN)

Age at Matriculation	Continuers	Per Cent of Total	Non-Continuers	Per Cent of Total
18 and under	66	94.29	84	88.42
19 - 20	1	1.43	3	3.16
21 - 25	0	..	4	4.21
26 - 29	0	..	1	1.05
30 and over	3	4.29	3	3.16
Total	70		95	

TABLE 3

DISTRIBUTIONS OF JUNIOR COLLEGE GRADUATES ACCORDING
 TO RATING ON THE SOCIOECONOMIC INDEX
 (MEN)

Socioeconomic Index No.	Continuers	Per Cent of Total	Non-Continuers	Per Cent of Total
0 - 9	1	.05	0	..
10 - 19	19	9.69	6	10.52
20 - 29	13	6.63	4	7.02
30 - 39	19	9.69	3	5.26
40 - 49	58	29.59	12	21.05
50 - 59	26	13.27	14	24.56
60 - 69	27	13.77	10	17.54
70 - 79	12	6.12	3	5.26
80 - 89	15	7.65	3	5.26
90 - 99	6	3.10	2	3.51
Total	196		57	

TABLE 4

DISTRIBUTIONS OF JUNIOR COLLEGE GRADUATES ACCORDING
 TO RATING ON THE SOCIOECONOMIC INDEX
 (WOMEN)

Socioeconomic Index No.	Continuers	Per Cent of Total	Non-Continuers	Per Cent of Total
0 - 9	0	..	0	..
10 - 19	9	9.47	7	10.00
20 - 29	3	3.16	4	5.71
30 - 39	10	10.53	9	12.86
40 - 49	21	22.11	16	22.86
50 - 59	13	13.68	6	8.57
60 - 69	23	24.21	16	22.86
70 - 79	6	6.32	5	7.14
80 - 89	6	6.32	3	4.29
90 - 99	4	4.21	4	5.71
Total	95		70	

TABLE 5

DISTRIBUTIONS OF JUNIOR COLLEGE GRADUATES ACCORDING
TO FATHER'S EDUCATION LEVEL (MEN)

Father's Education Level	Continuers	Per Cent of Total	Non-Continuers	Per Cent of Total
Less than high school	60	30.61	22	38.59
Graduated from high school	81	41.33	18	31.57
Some college	25	12.76	6	10.53
College graduate	30	15.31	11	19.30
Total	196		57	

TABLE 6

DISTRIBUTIONS OF JUNIOR COLLEGE GRADUATES ACCORDING
TO FATHER'S EDUCATION LEVEL (WOMEN)

Father's Education Level	Continuers	Per Cent of Total	Non-Continuers	Per Cent of Total
Less than high school	37	38.95	19	27.14
Graduated from high school	33	34.74	27	38.57
Some college	11	11.58	8	11.43
College graduate	14	14.73	16	22.86
Total	95		70	

TABLE 7

DISTRIBUTIONS OF JUNIOR COLLEGE GRADUATES ACCORDING
TO MOTHER'S EDUCATION LEVEL (MEN)

Mother's Education Level	Continuers	Per Cent of Total	Non-Continuers	Per Cent of Total
Less than high school	45	22.96	17	29.82
Graduated from high school	101	51.53	24	42.11
Some college	24	12.24	6	10.53
College graduate	26	13.27	10	17.54
Total	196		57	

TABLE 8

DISTRIBUTIONS OF JUNIOR COLLEGE GRADUATES ACCORDING
TO MOTHER'S EDUCATION LEVEL (WOMEN)

Mother's Education Level	Continuers	Per Cent of Total	Non-Continuers	Per Cent of Total
Less than high school	19	20.00	17	24.29
Graduated from high school	47	49.47	32	45.71
Some college	12	12.63	15	21.43
College graduate	17	17.90	6	8.57
Total	95		70	

TABLE 9

DISTRIBUTIONS OF JUNIOR COLLEGE GRADUATES
ACCORDING TO SCAT (VERBAL) T SCORES

SCAT (Verbal) T Score	Men		Women	
	Continuers	Non- Continuers	Continuers	Non- Continuers
0 - 9	..	..	..	..
10 - 19	..	..	..	..
20 - 29	..	..	..	..
30 - 39	1	2	..	2
40 - 49	94	35	48	31
50 - 59	79	11	35	30
60 - 69	19	7	12	6
70 - 79	2	2	..	1
80 - 89	..	..	..	..
90 - 99	1	..	..	..
Total	196	57	95	70

TABLE 10

DISTRIBUTIONS OF JUNIOR COLLEGE GRADUATES ACCORDING
TO SCAT (QUANTITATIVE) T SCORES

SCAT (quanti- tative) T Score	Men		Women	
	Continuers	Non- Continuers	Continuers	Non- Continuers
0 - 9	..	..	..	..
10 - 19	..	..	..	..
20 - 29	..	..	..	..
30 - 39	6	..	3	4
40 - 49	99	28	48	29
50 - 59	64	18	33	30
60 - 69	23	9	9	5
70 - 79	3	2	..	2
80 - 89	1	..	..	..
90 - 99	..	..	2	..
Total	196	57	95	70

TABLE 11

DISTRIBUTIONS OF JUNIOR COLLEGE GRADUATES
 ACCORDING TO FINAL GRADE POINT AVERAGE
 (MEN)

Final Grade Point Average	Continuers	Per Cent of Total	Non-Continuers	Per Cent of Total
2.0-2.49	90	45.92	30	52.63
2.5-2.99	69	35.20	17	29.82
3.0-3.49	29	14.80	7	12.28
3.5-4.00	8	4.08	3	5.26
Total	196		57	

TABLE 12

DISTRIBUTIONS OF JUNIOR COLLEGE GRADUATES
 ACCORDING TO FINAL GRADE POINT AVERAGE
 (WOMEN)

Final Grade Point Average	Continuers	Per Cent of Total	Non-Continuers	Per Cent of Total
2.0-2.49	26	27.37	33	47.14
2.5-2.99	38	40.00	21	30.00
3.0-3.49	23	24.21	9	12.86
3.5-4.00	8	8.42	7	10.00
Total	95		70	

TABLE 13

DISTRIBUTIONS OF JUNIOR COLLEGE GRADUATES
 ACCORDING TO FINANCIAL DEPENDENCY
 (MEN)

Dependency Scale	Continuers	Per Cent of Total	Non-Continuers	Per Cent of Total
1. All self	38	19.39	16	28.07
2. 3/4 self, 1/4 other sources	13	6.63	3	5.26
3. 1/2 self, 1/2 other sources	53	27.04	17	29.82
4. 1/4 self, 3/4 other sources	18	9.18	2	3.51
5. All parent or other relatives or other source	74	37.76	19	33.33
Total	196		57	

TABLE 14

**DISTRIBUTIONS OF JUNIOR COLLEGE GRADUATES
ACCORDING TO FINANCIAL DEPENDENCY
(WOMEN)**

Dependency Scale	Continuers	Per Cent of Total	Non-Continuers	Per Cent of Total
1. All self	11	11.58	10	14.29
2. 3/4 self, 1/4 other sources	1	1.05	2	2.86
3. 1/2 self, 1/2 other sources	18	18.95	12	17.14
4. 1/4 self, 3/4 other sources	12	12.63	5	7.14
5. All parent or other relatives or other source	53	55.79	41	58.57
Total	95		70	

TABLE 15

DISTRIBUTIONS OF JUNIOR COLLEGE GRADUATES
 ACCORDING TO FAMILY RESPONSIBILITIES
 (MEN)

Scale of Family Responsibilities	Continuers	Per Cent of Total	Non-Continuers	Per Cent of Total
1. Single	175	89.29	53	92.98
2. Married, 2 dependents	15	7.65	1	1.75
3. Married, 3 dependents	4	2.04	2	3.51
4. Married, 4 or more dependents	2	1.02	1	1.75
Total	196		57	

TABLE 16

**DISTRIBUTIONS OF JUNIOR COLLEGE GRADUATES
ACCORDING TO FAMILY RESPONSIBILITIES
(WOMEN)**

Scale of Family Responsibilities	Continuers	Per Cent of Total	Non-Continuers	Per Cent of Total
1. Single	90	94.74	67	95.71
2. Married, 2 dependents	3	3.16	3	4.29
3. Married, 3 dependents	1	1.05	0	..
4. Married, 4 or more dependents	1	1.05	0	..
Total	95		70	

TABLE 17

 DISTRIBUTIONS OF JUNIOR COLLEGE GRADUATES ACCORDING
 TO NUMBER OF BROTHERS AND SISTERS
 (MEN)

Number of Brothers and Sisters	Continuers	Per Cent of Total	Non- Continuers	Per Cent of Total
0	32	16.33	11	19.30
1	83	42.35	17	29.82
2	35	17.86	9	15.79
3	22	11.22	15	26.32
4	16	8.16	1	1.75
5	2	1.02	2	3.51
6 or more	6	3.06	2	3.51
Total	196		57	

TABLE 18

DISTRIBUTIONS OF JUNIOR COLLEGE GRADUATES ACCORDING
TO NUMBER OF BROTHERS AND SISTERS (WOMEN)

Number of Brothers and Sisters	Continuers	Per Cent of Total	Non Continuers	Per Cent of Total
0	10	14.29	19	20.00
1	20	28.57	35	36.84
2	23	32.85	28	29.47
3	8	11.43	7	7.37
4	7	10.00	4	4.21
5	1	1.43	1	1.05
6 or more	1	1.43	1	1.05
Total	70		95	

TABLE 19

DISTRIBUTIONS OF JUNIOR COLLEGE GRADUATES ACCORDING
TO NUMBER OF SEMESTERS ENROLLED

Number of Semesters Enrolled	Men		Women	
	Continuers	Non- Continuers	Continuers	Non- Continuers
1	2	..	..	..
2	4	1	2	..
3	6	1	4	4
4	132	28	72	60
5	36	20	15	6
6	12	4	2	..
7 or more	4	3	..	..
Total	196	57	95	70

TABLE 20

DISTRIBUTIONS OF JUNIOR COLLEGE GRADUATES ACCORDING
TO NUMBER OF SEMESTER HOURS EARNED

Number of Semester Hours Earned	Men		Women	
	Continuers	Non- Continuers	Continuers	Non- Continuers
10-19	1	...	...	...
20-29	3	1	...	...
30-39	4	1	4	1
40-49	3	...	...	2
50-59	10	2	2	3
60-69	133	39	68	61
70-79	39	12	21	3
80-89	3	1	...	...
90-99	...	1	...	...
Total	196	57	95	70

CHAPTER IV

ANALYSIS OF DATA

The problem of classification of individuals has long been of concern to personnel workers in business, industry, the Armed Forces, and government services as well as in education. The problem is essentially one of collecting and recording traits and characteristics of people and making judgments about them on the basis of the data available.

Ideally it would be possible to select a group of characteristics which can be easily and accurately measured, apply these measures in the appropriate statistical equation, and by mathematical analysis place the individuals in the proper categories for prediction of whatever is in question. It is obvious that human beings are much too complex for any such simplified procedure to be successful. Nevertheless, it is necessary that the best available methods of classification be used for the particular job that is to be done.

In dealing with personnel problems, the Armed Services and the United States Employment Service used the

technique of multiple regression analysis to predict success on various jobs. As pointed out by Tiedeman, this procedure presented a number of difficulties not always easy to solve.

Multiple regression requires

the definition of a criterion and the assignment of individuals to one of at least two categories along the criterion continuum. It has frequently been found that performance in a job involves a number of different activities not all of which are engaged in by all of the people. And yet in order to use the multiple regression approach, it has been necessary to put this information together in some manner such that an ordering and linear scaling of the overall capability of each person is possible. Frequently, one has been able to perform this operation only by means of judgments of persons who oversee the work of the individuals.¹

In addition to this subjective selection of material, there is also the problem of making the criterion scales comparable to one another so that a comparison of criterion estimates will be possible. This was sometimes done in the job success predictions by "normalizing the criterion estimates in each case and expressing criterion estimates relative to the average performance of individuals in various jobs."²

Perhaps the greatest difficulty in using the multiple regression procedure for this kind of problem is found in the

¹David V. Tiedeman and others, "The Multiple Discriminant Function--A Symposium," Harvard Educational Review, XXI (Spring, 1951), 72.

²Ibid.

fact that it is answering a question which may not need to be answered. According to Rulon, if the question being asked is "How can I analyze these data so I may determine the group in which an individual will perform best?" then multiple regression analysis is appropriate. If, on the other hand, the question being asked is, "How can I analyze these data so that I may determine the group which an individual is most like?" then the discriminant analysis is considered the most appropriate technique.³

In the present study, the problem was one of ordering a group of individuals on the basis of a group of 12 variables in such a way that a new individual on whom the set of variables is known could be classified as belonging to one or the other of two groups: junior college graduates who enroll at four-year institutions and junior college graduates who do not enroll at four-year institutions. This is to say that he is most like the members of one or the other of the two groups.

It is important to keep in mind at this point that such a classification is possible only if the variables selected are found definitely to discriminate between the two groups.

³ Phillip J. Rulon, "The Stanine and the Separile: A Fable," Educational Research Corporation Bulletin (February, 1950), pp. 2-10, quoted in David V. Tiedeman and others, "The Multiple Discriminant Function--A Symposium," Harvard Educational Review, XXI (Spring, 1951), 72-73.

The actual classification of the graduates in one or the other of the two groups resulted from the student's own decision to continue or not to continue. This classification is now the criterion, and for the purpose of analysis a value of 1 was assigned to the continuing graduates and a value of 2 was given to the non-continuers. The twelve indicators already described became the predictor variables and the procedure for discriminant function analysis was carried out.⁴ A general description of the computer program used in the analysis is as follows:

This program computes a linear function of n variables measured on each individual of two groups which in a certain sense serves as a best index for discrimination between the groups. The criterion of "best" is that the difference between the mean indices for the two groups divided by a pooled standard deviation of the indices should be as large as possible.⁵

The computation of the discriminant function begins with the calculation of means for each of the two groups.

$$(x_{i \cdot 1}, x_{i \cdot n}) \text{ where } i = 1, 2 \\ j = 1, 2, \dots, n_i \\ k = 1, 2, \dots, n$$

⁴ A description of the discriminant function and its uses can be found in Paul G. Hoel, Introduction to Mathematical Statistics (1st ed.; New York: John Wiley and Sons, Inc., 1947), pp. 121-26.

⁵ Lynn C. Hayward, Discriminant Analysis--Two Groups: BIMD Computer Programs Manual, Department of Preventive Medicine and Public Health, School of Medicine, University of California (Los Angeles: by the Department, 1961), BIMD05. The discriminant function equations which follow are all taken from this work.

n_i = number of observations (students) in the i -th group

n = number of variates

The total population had been divided at this point into groups according to sex. Thus, the means and all other calculations are recorded for men and women separately. (See Tables 1-20.)

The matrices S^1 and S^2 are computed

$$S^1 = (s^1_{pq}) \quad i = 1, 2$$

$$s^1_{pq} = n_i (x_{ijp} - \bar{x}_{i.p}) (x_{ijq} - \bar{x}_{i.q}) \\ j = 1$$

The matrix A is computed

$$A = S^1 + S^2$$

A is inverted using an inversion routine prepared by Rocketdyne.

The coefficients $\lambda_1, \lambda_2, \dots, \lambda_n$ of the discriminant function are computed. (See Appendix B.)

Let $(a^{j1}, a^{j2}, \dots, a^{jn})$ be the j -th row of A^{-1}

$$\text{Then } \lambda_1 = \sum_{p=1}^n a^{jp} (\bar{x}_{1.p} - \bar{x}_{2.p})$$

Mahalanobis' D^2 is computed

$$D^2 = (n_1 + n_2 - 2) \sum_{i=1}^n \sum_{j=1}^n a^{ij} (x_{1.i} - \bar{x}_{2.1}) \\ (x_{1.j} - \bar{x}_{2.j})$$

This is a generalized distance statistic and is described as:

A statistic introduced by Mahalanobis (about 1924) as a measure of the "distance" between two populations with differing means but identical dispersion matrices.⁶

Using the D^2 thus computed, the F statistic is calculated. This statistic, also called the variance-ratio test, is described as:

A test based on the ratio of two independent statistics, each of which is distributed as the variance in samples from normal populations with the same parent variance. Usually the statistics themselves are quadratic estimations of the parent variance. The test is widely employed in variance-analysis to test the homogeneity of a set of means.⁷

It will be observed from the equation for F that the quotient derived from the normal F ratio is multiplied by the Mahalanobis D^2 . Hence, the right side of the equation becomes a quantity rather than a ratio and the left side of the equation gives the degrees of freedom for the test.

$$F(n, n_1 + n_2 - 1 - n) = \frac{n_1 n_2 (n_1 + n_2 - n - 1)}{n(n_1 + n_2)(n_1 + n_2 - 2)} \cdot D^2$$

The values obtained from the equation were checked in the table of the F distribution⁸ to determine whether they could be considered statistically significant.

⁶ Maurice G. Kendall and William R. Buckland, A Dictionary of Statistical Terms (London: Oliver and Boyd, 1957), p. 76.

⁷ Ibid., p. 51.

⁸ George W. Snedecor, Statistical Methods (4th ed., Ames, Iowa: The Iowa State College Press, 1946), pp. 222-25.

For each individual in the group being studied, a weighted Z score was calculated according to the equation

$$z_{a_i} = \lambda_1 x_{i1} a_1 + \lambda_2 x_{i2} a_2 + \dots + \lambda_n x_{in} a_n$$

a = 1, 2, ..., n_i
i = 1, 2

The weighted Z scores were then ordered according to the value of each, the one of greatest magnitude being placed in rank 1 and the one of least magnitude having the number equal to $N_1 + N_2$. In this distribution the scores for continuers and non-continuers were kept separate but each score was ranked according to its position in the distribution made up of the two groups combined. The placing of the distributions of the two groups together allowed them to be inspected for amount of differentiation or overlap present.

Two separate sets of calculations were made on the basis of sex. For the distribution of scores in the men's group the median was found and the scores above and below the median were counted. The same was done for those in the women's group. (See Appendix B.)

It would have been reasonable to assume, from the evidence related to high school dropouts and attrition in college, that continuance of junior college graduates in four-year institutions is in some way affected by each of the 12 factors selected for analysis. It is true, however, that such an assumption would be predicated upon at least two

further assumptions: (1) that junior college students exhibit approximately the same characteristics as a group as high school students and (2) that students in four-year colleges and universities represent during their freshman and sophomore years essentially the same population as found in junior colleges. If either of the latter statements is true, then differences should appear that would discriminate between the same or similar variables found useful in predicting high school dropout and entrance to or continuance in four-year institutions.

In order to test the difference between the continuing and non-continuing groups of junior college graduates, the scores for the 12 selected variables were combined in such a way as to maximize the distance between the two groups by the method of discriminant function as described above.

For the male group the following values were found:

$$\text{Mahalanobis' } D^2 = .4096$$

$$F(12, 240) = 1.44$$

To find the significance of the variance, it was necessary to enter the table of the F distribution with 12 and 240 degrees of freedom. In order to be significant at the 1 per cent level of confidence, the F value would have to be equal to or more than 2.28, or to be significant at the 5 per cent level the F value must be equal to or more than 1.80.

$F = 1.44$ is less than 1.80 and, therefore, falls within the area of rejection. The hypothesis that F is not significant at the .05 level of confidence is accepted.

For the female group

Mahalanobis' $D^2 = .4896$

$F(12, 153) = 1.55$

The F distribution for this value is checked with 12 and 153 degrees of freedom. In order to be significant at the 1 per cent level of confidence, the F value would have to be equal to or more than 2.30 , or to be significant at the 5 per cent level an F value of 1.82 would be required.

$F = 1.55$ is less than 1.82 and, therefore, falls within the area of rejection at the .05 level.

The conclusion from the foregoing test was that between the continuing and non-continuing groups no differences were found for the 12 variables which were statistically significant at a level generally considered important enough for serious consideration and further analysis. However, the possibility that one or more of the variables taken singly might show significant differences required that appropriate tests be run to test these differences. Student's t test was selected for this analysis. Again the men's group and the women's group were kept separate.

In dealing with the means and differences between the means for some of the variables, reference may be made to the scales on which the original data were quantified. For others the means are from easily recognizable quantities and are in the same form as taken from the data collection sheet.

Age at Matriculation

For Variable 1, Age at Matriculation, the mean age of the individuals by groups is given in number of years at the time they matriculated for the first time in the junior college.

TABLE 21
AGE AT MATRICULATION

	N	Mean (Continuers)	Mean (Non- Continuers)	Differ- ence	t	Degrees of Freedom
Men	253	19.0510	19.6315	-.5805	-.8507*	251
Women	166	18.3789	18.1690	.2099	.2706*	163

*Not significant at the .05 level of significance.

Table 21 shows that there is no significant difference between the means of the continuers and the non-continuers on this factor. The figures themselves tell a little about the junior college student when he enters.

It is not surprising that the mean age for boys, slightly more than 19 years in both groups, is a little higher than that of the girls, slightly more than 18 years. It may be that a number of boys choose to fulfill an obligation to the armed services before beginning college. Other factors may enter in, but both means being relatively close to the usual age at high school graduation would seem to indicate that there were few persons who were much older than 19.

Socioeconomic Status

As seen in Table 22, there is no significant difference between the means of the continuers and the non-continuers in either the men's or the women's group. Furthermore, all four of the means are close together, the lowest being 50.1990 for men continuers and the highest, 53.0526 for women continuers.

TABLE 22
SOCIOECONOMIC STATUS

	N	Mean (Continuers)	Mean (Non- Continuers)	Differ- ence	<u>t</u>	Degrees of Freedom
Men	253	50.1990	50.9123	-.7133	-.2365*	251
Women	166	53.0526	51.1690	1.8836	.4241*	163

*Not significant at the .05 level of significance.

The data from which the means were derived came from the socioeconomic index which places all occupations on a scale running approximately from 1 to 100. The means of the four groups appear to be near the mid-point of the socioeconomic index. This does not indicate anything in terms of the per cent of the total population with whom these groups can be compared. It is possible, however, to make such a comparison by referring to the census figures for various occupations given for 1950, the last census of the population before the majority of the individuals in the present study had enrolled in the junior colleges. It is possible to find the mean socioeconomic index for the population at that time and make the comparison with comparable figures.

The mean socioeconomic index for 42.1 million males in the experienced labor force is 30.⁹ When compared with the means of the four groups of junior college graduates, it is seen that the mean socioeconomic index for the total group of graduates is higher by 20 scale points than the mean for the total population.

⁹Albert J. Reiss, Jr., Occupations and Social Status (New York: Free Press of Glencoe, 1961), p. 141.

TABLE 23

MEAN SOCIOECONOMIC INDEX FOR MALES IN THE EXPERIENCED CIVILIAN LABOR FORCE, 1950, AND FATHERS OF JUNIOR COLLEGE GRADUATES

	N	Mean (Continuers)	Mean (Non- Continuers)	Mean (Experienced Civilian Labor Force, 1950)
Men	253	50.1990	50.9123	30.00
Women	166	53.0526	51.1690	30.00

A further comparison can be made on the basis of the per cent of the total experienced labor force which would be lower on the socioeconomic scale than the fathers of the junior college graduates. From Table VII-3, Frequency Distribution of Socioeconomic Index for Male Experienced Civilian Labor,¹⁰ the necessary ratios can be calculated. Below the point rated 50 on the socioeconomic scale, 80.4 per cent of the total male experienced labor force is found. This suggests that the index means for the fathers of the junior college graduates is higher than at least 80 per cent of the experienced civilian labor force. It would appear that the junior college graduates come from families which represent a group somewhat higher on the socioeconomic scale than is found in the total population.

¹⁰ Ibid., p. 147.

Father's Education Level

The means of all four groups on this factor were slightly more than 2, the value selected to designate those who had finished high school. Comparing again the fathers of the junior college graduates with males in the civilian labor force in 1950, it is seen that while the mean of Father's Education Level is a little more than the level of high school completion, only 34 per cent of the males in the experienced civilian labor force, 1950, had completed four years of high school.¹¹ The differences between the means were not significant at the .05 level for either men or women.

TABLE 24
FATHER'S EDUCATION LEVEL

	N	Mean (Continuers)	Mean (Non- Continuers)	Differ- ence	<i>t</i>	Degrees of Freedom
Men	253	2.1276	2.1053	.0223	.1420*	251
Women	166	2.0210	2.2816	-.2606	-1.6461*	163

*Not significant at the .05 level of significance.

¹¹ Ibid., p. 141.

Mother's Education Level

The values for Mother's Education Level are similar in size to the values for Father's Education Level, just above the level of the high school graduate. The differences were not significant at the .05 level.

TABLE 25
MOTHER'S EDUCATION LEVEL

	N	Mean (Continuers)	Mean (Non- Continuers)	Differ- ence	<u>t</u>	Degrees of Freedom
Men	253	2.1581	2.1578	.0003	.0019*	251
Women	166	2.2842	2.1267	.1575	.9485*	163

*Not significant at the .05 level of significance.

SCAT (Verbal) Scores

The means of scores on the Verbal SCAT tests were all close to 50, which could be considered the mid-point in the normal T distribution. The differences between the continuers and non-continuers were not significant at the .05 level for either the men or the women.

TABLE 26
SCAT (VERBAL) T SCORE

	N	Mean (Continuers)	Mean (Non- Continuers)	Differ- ence	t	Degrees of Freedom
Men	253	51.9780	50.6105	1.3675	1.1906*	251
Women	166	51.6452	51.3648	.2804	.1351*	163

*Not significant at the .05 level of significance.

SCAT (Quantitative) Scores

The mean Quantitative SCAT scores were also close to the mid-point on the T scale, and the differences between the continuers and non-continuers were not significant at the .05 level.

TABLE 27
SCAT (QUANTITATIVE) T SCORE

	N	Mean (Continuers)	Mean (Non- Continuers)	Differ- ence	t	Degrees of Freedom
Men	253	51.3428	52.4491	-1.1063	.9523*	251
Women	166	51.6873	51.0633	.6240	.3700*	163

*Not significant at the .05 level of significance.

Final Grade Point Average

Grade point averages were calculated on the basis of four grade points for an "A," three for a "B," two for a "C," one for a "D," and none for an "F." Thus, the means for the groups would all be in the area on the scale between 2.5 and 2.9, usually thought of as the "C+" area.

TABLE 28

FINAL GRADE POINT AVERAGE

	N	Mean (Continuers)	Mean (Non- Continuers)	Differ- ence	t	Degrees of Freedom
Men	253	2.6212	2.5632	.0580	.9200*	251
Women	166	2.8053	2.6943	.1110	1.4268*	163

*Not significant at the .05 level of significance.

Financial Dependency

As shown by Table 29, the means for the variable, Financial Dependency, were all close to 3 for men and around 4 for women in both groups. The variable was quantified on a 5 point scale from 1, for all self, to 5, for all parent, other relative or other source. Hence the means close to 4 would indicate a tendency toward some dependency on self but more, perhaps as much as three-fourths of the total, dependency on other sources.

TABLE 29
FINANCIAL DEPENDENCY

	N	Mean (Continuers)	Mean (Non- Continuers)	Differ- ence	t	Degrees of Freedom
Men	253	3.3980	3.0877	.3103	1.3362*	251
Women	166	4.0000	3.9295	.0420	.3212*	163

*Not significant at the .05 level of significance.

The mean of the non-continuing men is approximately 3, a value which represents the point on the scale where dependency would be one-half on self and one-half on other sources. In neither of these groups is the difference between the continuers and non-continuers significant at the .05 level.

Family Responsibilities

The student's responsibility to his own family was calculated on the basis of marital status and number of dependents. A logical assumption would be that heavier family responsibilities would tend to militate against continuance at four-year institutions. Each individual was given a score from 1, with no family responsibilities, to 4, if married with four or more dependents. Table 30 shows that there were

very few cases with a value of more than 1 on this variable, and 1 was the value assigned to a single person with no other dependents.

TABLE 30
FAMILY RESPONSIBILITIES

	N	Mean (Continuers)	Mean (Non- Continuers)	Differ- ence	t	Degrees of Freedom
Men	253	1.1480	1.1404	.0076	.1021*	251
Women	166	1.0842	1.0422	.0420	.7857*	163

*Not significant at the .05 level of significance.

There is no difference between the continuers and non-continuers significant at the .05 level on family responsibilities.

Number of Brothers and Sisters

It could be hypothesized that the larger the number of brothers and sisters a student has, the larger will be the financial burden on the family. However, there is the equally tenable hypothesis that the older brothers and sisters in a family of limited financial resources can offer encouragement based on their own attainments in higher education; they may also offer financial assistance to the younger members of

the family. In either case, the differences as shown in Table 31 were not significant at the .05 level, so the hypothesis that the groups come from the same population is accepted.

TABLE 31
NUMBER OF BROTHERS AND SISTERS

	N	Mean (Continuers)	Mean (Non- Continuers)	Differ- ence	t	Degrees of Freedom
Men	253	1.7449	2.0351	-.2902	-1.1237*	251
Women	166	1.4842	1.8732	-.3890	-1.7990*	163

*Not significant at the .05 level of significance.

Number of Semesters Enrolled

This variable reveals a significant difference between the continuers and non-continuers in the men's group. The means are stated in the raw data form, and although some students were included in the study who had less than four semesters' enrollment in the junior college, their presence was offset by those who spent more than four semesters there. The means of all groups are above 4, the number of semesters usually required for graduation.

TABLE 32
NUMBER OF SEMESTERS ENROLLED

	N	Mean (Continuers)	Mean (Non- Continuers)	Differ- ence	<u>t</u>	Degrees of Freedom
Men	253	4.2653	4.5964	-.3311	-2.4180	251
Women	166	4.1158	4.0281	.0877	1.0698*	163

*Not significant at the .05 level of significance.

Number of Semester Hours Earned

A second difference significant at the .05 level occurs between the continuers and non-continuers in number of semester hours earned in the women's group. The men's group showed no difference significant at the .05 level on this variable.

TABLE 33
NUMBER OF SEMESTER HOURS EARNED

	N	Mean (Continuers)	Mean (Non- Continuers)	Differ- ence	<u>t</u>	Degrees of Freedom
Men	253	64.1071	65.1754	-1.0683	-.7199*	251
Women	166	64.6947	62.5211	2.1736	1.9614	163

*Not significant at the .05 level of significance.

The women continuers had completed a significantly higher number of semester hours than the women non-continuers. Since there would seem to be a definite correlation between semesters enrolled and semester hours completed, the writer is at a loss to explain the fact that on the only two variables that showed a significant difference for any groups, one, number of semesters enrolled, was higher for the non-continuing men and the other, number of semester hours earned, was higher for the continuing women.

It is possible that during their stay at the junior college, some men decided that they would not continue at a four-year institution. The reasons that could be offered for the individual's decision are legion, but if the decision were made before graduation, then he might choose to take longer to meet graduation requirements, perhaps working part time and taking fewer courses.

The larger number of semester hours earned by the continuing women could be the result of their taking extra courses in anticipation of upper division work.

The Median Test

After it had been determined that the F test did not show a significant difference between continuers and non-continuers on the basis of the combined variables, nor did significant differences appear on most variables when they

were analyzed by the t test, the distributions of weighted Z scores were examined for the purpose of evaluating the proportion of cases in each group above and below the median.

The "median test" is a statistical procedure that is sensitive to differences in location and is relatively uninfluenced by differences in the shapes of distributions.

Unlike the t test, no assumption of normality of distribution is required.¹² The χ^2 test of significance from two-way tables is employed to see if the proportions of cases above and below the median in two groups are significantly different.

The Z scores for all individuals had been calculated and placed in rank order with the highest value in rank 1 and the lowest value in rank N. The medians were found and the following analysis was made.

¹²An explanation of the median test can be found in Allen L. Edwards, Statistical Methods in the Behavioral Sciences (New York: Rinehart and Co., Inc., 1954), pp. 387-90.

TABLE 34
EXPECTED FREQUENCIES FOR MEN

	Continuers	Non-Continuers	Both
Above median Z	97.5	28.5	126
Below median Z	97.5	28.5	126
Total	195.0	57.0	252

TABLE 35
OBTAINED FREQUENCIES FOR MEN
(COMBINED VARIABLES)

	Continuers	Non-Continuers	Both
Above median Z	106	20	126
Below median Z	89	37	126
Total	195	57	252

Using the equation

$$\chi^2 = \frac{\sum (f_o - f_e)^2}{f_e} \quad \text{where } f_o \text{ is the observed frequency}$$

and f_e is the expected frequency.

$$\chi^2 + 6.08$$

A χ^2 of the magnitude 6.08 is found to be significant at the .02 level of significance with one degree of freedom.

That is to say, a value this large would occur by chance 2 per cent of the time or less.

TABLE 36
EXPECTED FREQUENCIES FOR WOMEN

	Continuers	Non-Continuers	Both
Above median Z	46.71	35.29	82
Below median Z	47.29	35.71	83
Total	94.00	71.00	165

TABLE 37
OBTAINED FREQUENCIES FOR WOMEN
(COMBINED VARIABLES)

	Continuers	Non-Continuers	Both
Above median Z	56	26	82
Below median Z	38	45	83
Total	94	71	165

$$\chi^2 = 8.554$$

A χ^2 of 8.554 with one degree of freedom is found to be significant at the .01 level of significance. A value this large would occur by chance only 1 per cent of the time or less.

From the chi square tests it was possible to conclude that the proportions of cases above and below the median in the continuers groups for both men and women differed from those found in the non-continuing groups at levels of significance sufficient to justify the statement that the higher proportions of continuers above the median was due to something other than chance occurrence.

The separate variables having already been analyzed for the efficacy of each in producing the weighted Z scores, it can be concluded that the variables taken singly did not discriminate between continuers and non-continuers, but that in combined form they produce a distribution which does discriminate in regard to position of the cases when placed in rank order.

Prediction of continuance or non-continuance

It has been shown that a significant relationship exists between the per cent of cases in one group or the other above and below the median on weighted Z scores. The scores are derived from the equation which has as multipliers the discriminant function coefficients for each variable. With these coefficients known, it should be possible to predict under certain conditions whether or not a new individual for whom the measures are known will continue or not continue. The degree of assurance which will accompany the predictions

will be directly related to the ratios known to exist in the population. Figure 1 shows this relationship for the prediction of continuance and non-continuance with a three to one chance of being correct. To simplify the graphical presentation, the weighted Z scores were multiplied by 10,000; the values then appeared as whole numbers. That point on the scale was then located above which the per cent of the total number of continuers was three times as great as the per cent of the total number of non-continuers. The point at which these conditions were met proved to be 34.09.

A second point was located below which the per cent of the total number of non-continuers was three times as great as the per cent of the total number of continuers. This point was 8.58.

From the above information, then, the prediction that an individual with a weighted Z score of 34.09 or above would be in the continuing group would be correct three times out of four. By the same token, the prediction that an individual with a score of 8.58 would not continue would be correct three times out of four.

Between the scores above and below which a prediction can be made which will be correct three times out of four are found 366 cases, 87 per cent of the total of 419.

To illustrate further the use of the Z distribution in prediction, the points were located above and below which

there would be a 2 to 1 chance of successful prediction. The per cent of continuers from Z score 32.98 ranked 39 in the distribution, upward is twice the per cent of non-continuers. Therefore, the probability of an individual with a score this high or higher being in the continuing group is approximately twice as great as the probability of his being in the non-continuers group.

The per cent of non-continuers found from the score 12.45, ranked 375 in this distribution, and down is more than twice as large as the per cent of continuers. Therefore, the prediction that an individual with a weighted Z score of this magnitude or smaller will be in the non-continuing group will be correct two times out of three.

Between the two scores above and below which a prediction can be made which will be correct two times out of three are found 335 (80 per cent) of the total number of cases for which no prediction is made.

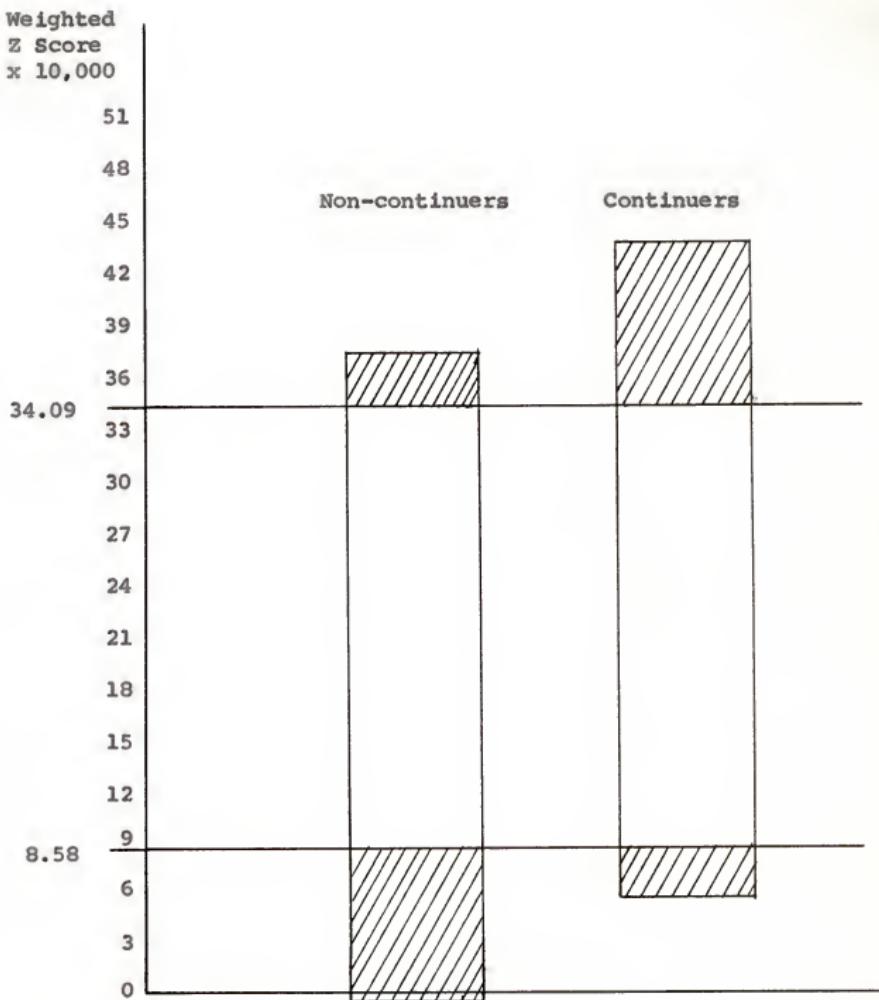


Fig. 1. Weighted Z Score points above which the per cent of continuers is three times as great as the per cent of non-continuers and below which the per cent of non-continuers is three times as great as the per cent of continuers (men's and women's groups combined).

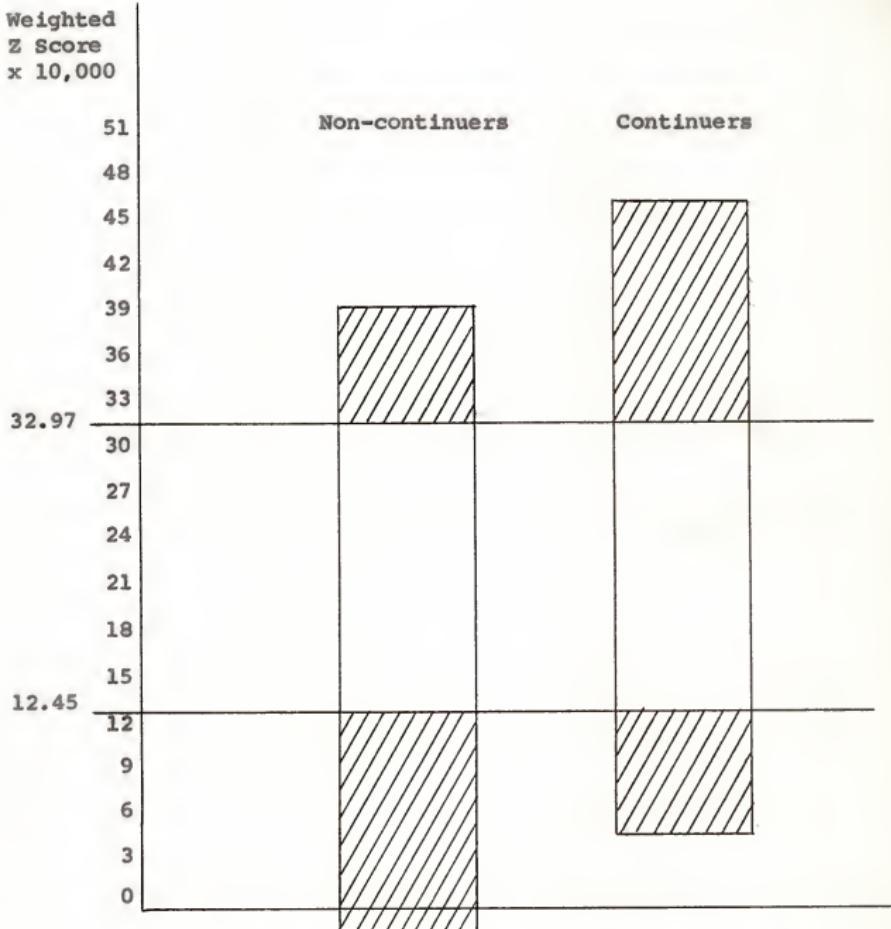


Fig. 2. Weighted Z score points above which the per cent of continuers is twice as great as the per cent of the non-continuers and below which the per cent of non-continuers is twice as great as the per cent of continuers (men's and women's groups combined).

Summary

Analysis of the differences between continuing and non-continuing of junior college graduates on 12 variable factors which might have contributed to continuance or non-continuance reveals that only two, number of semesters enrolled and number of semester hours earned, had differences large enough to be significant at the .05 level of significance. Neither of these differences occurred in both the men's and women's groups. The evidence supports the hypothesis that the means of the two groups for each of the other 11 variables do not differ significantly. The fact that two variables were significantly different can possibly be attributed to the fact that for 12 variables the multiplication principle operates in such a way that the one significant difference in the men's group and the one in the women's group could be attributed to chance. Therefore, the conclusion is that the variables, examined severally, do not discriminate between continuing and non-continuing junior college graduates, but in a combined form a distribution is created which does discriminate between some continuers and non-continuers in regard to position of cases when placed in rank order.

CHAPTER V

SUMMARY AND CONCLUSIONS

The modern community junior college has accepted as an overall aim the offering of further education to a larger proportion of the population. This implies an extension of the long-accepted public school philosophy which states a dedication to the idea that every child should be given the opportunity to realize his maximum educational potential.

Parents as well as educators have shown concern with the number of students who have failed to realize their potential by dropping out of school. Lawmakers are perturbed by the economic loss resulting from premature termination of education. Their concern is not only with the waste of public funds but also with the failure of the system of higher education to fill the professional and semiprofessional positions with competent people and to produce the additional income which accompanies the higher paying positions.

Summary

This study has attempted to identify certain factors which tend to influence junior college graduates to continue

at a senior institution and to determine the per cent of continuance or non-continuance explained by these factors.

The members of the 1959 and 1960 graduating classes who had enrolled in transfer programs at St. Petersburg Junior College and Palm Beach Junior College were selected for the study. Letters were sent to the 83 colleges and universities where the graduates might have transferred, asking if the students listed had enrolled in their institutions. Eighty-one of the four-year institutions responded, accounting for all but two of the graduates who might have transferred. Of the original group, composed of the 584 graduates of both junior colleges combined, 365 or 62.5 per cent actually enrolled at one of the senior institutions.

Data were collected from the students' folders for every individual included in the study. Of 25 items of information recorded on the data collection sheets, 12 were selected which were most complete for the entire group and which were thought to be most relevant to the problem. A statistical comparison was then made between the continuing and non-continuing groups on these indicator variables.

Taken as a group, the graduates of two selected junior colleges who continued at four-year institutions do not appear to differ significantly from the graduates who did not continue in regard to any of the 12 selected indicator vari-

ables: age at matriculation, socioeconomic status, father's education level, mother's education level, SCAT (Verbal) score, SCAT (Quantitative) score, final grade point average, financial dependency, family responsibilities, number of brothers and sisters, number of semesters enrolled, and number of semester hours earned. When the variables were combined and each individual given a weighted score resulting from his own scores and the weighted coefficients, significant differences appear between the continuers and non-continuers in regard to position of the scores. The continuing group tended to rank higher on the scale of weighted Z scores when the proportions were equalized. The combined variables, then, discriminate between the continuers and the non-continuers and show a relationship which did not appear when the variables were considered separately. However, these variables did not discriminate for 87 per cent of the students on a three out of four chance basis, or for 80 per cent of the students on a two out of three chance basis.

The search for information about junior college students which will predict continuance with a high degree of success, and which will be at the same time easy to collect and use seems doomed to frustration. The junior college, while operating in accord with its several unique functions, either attracts or produces students who are unique. While

they are doubtless subject to all the influences--psychological, physiological, and cultural--which impinge upon college students elsewhere, there is little reason to suspect that they will behave like students in the first two years at a university or that their behavior can be predicted in the same way. Neither is there evidence that they will behave as they did in high school.

It is possible to predict with a limited degree of assurance by the use of the individual's scores on the selected variables and the discriminant function coefficients in an equation which has been given. Most will probably find the method cumbersome and not sufficiently accurate to justify much effort in its use. On the other hand, the Z score tables illustrate the complexity of the prediction process and offer encouragement for further research, especially in the area of variables not being quantified at the present time.

Recommendations

The following recommendations are made under the assumption that in the community junior colleges the practices and policies suggested have not already been adopted. Actually, changes are being made in junior college programs so rapidly that it is difficult to keep up with them. Therefore, the recommendations are offered for general application

and without specific reference to the colleges in the present study.

1. Each junior college should decide what specific information will be needed from entering students and collect that information for every student.

2. Each junior college should have an efficient system for collecting needed information and for storing it in such a way that it will be readily available for use. If data processing equipment is available, the best use should be found for it in these operations.

3. In order to assess the junior college student more accurately and more easily, the colleges should develop instruments and methods to evaluate those factors and influences which have herein been called intangible. Among the ones of these which might prove most beneficial to the college are:

(a) Attitudes of entering students. It would be especially useful to study those attitudes of the student which have been long in forming and which are likely to have an important bearing on the decisions he will make while in the junior college.

(b) Values of the student. It would be useful to know what things the student really considers important and what values of his will make the most difference in his decisions concerning his own goals.

(c) Interests of the student. The real interests of the student are not likely to appear in response to superficial questionnaires any more than are attitudes and values. His interests will have much to do with his decisions regarding further education and should be studied in depth.

(d) The influence of the home. This is really a complex of interrelated factors and the appraisal of these would be a difficult task but rewarding for the college. To be considered in this category are the attitudes and values of each parent and the influence of each upon the student, the attitudes and values of brothers and sisters as well as the number of them older and younger, and the actual atmosphere of the home environment; its influence might be considered positive, negative, or of little consequence.

(e) The influence of the peer-group in the junior college. It would seem that the sub-cultures that arise within the junior college would have a certain influence on the decisions of their members. It may be that the student chooses to join a group whose values are similar to his own. It may also be true that these groups within the college population are instrumental in shaping the members' decisions to seek further education after leaving the junior college.

(f) The influence of college teachers. If the belief that the junior college is influencing its clientele is true,

then it should be possible to evaluate realistically the influence of the faculty upon the student.

(g) The influence of student personnel service.

Counselors and guidance personnel are in a position to have a significant influence upon the student during his stay at the junior college. The personal contact and the student personnel files give the counselors considerable knowledge about the student. People in student personnel services need to know as much as possible about the students, and they are the logical ones to collect the more subjective data about their clients. This information should be made available to teachers and others who would be in a position to help the student. Also, it is through the counselor's assistance that many students will be brought to look at their goals more realistically. If those students who enter the junior college transfer program decide for any reason that they will not continue past the junior college, then the counselors may not only be able to discover some reasons for the decision but may be able to guide the student into a program from which he will derive the maximum benefit.

Those in student personnel work are well aware that counseling should start long before an individual reaches college. Close contact with secondary and even elementary school teachers and counselors could help greatly in identi-

fying those students who will go to the junior college and also assist in guiding them into suitable courses of study. Clearly defined programs of guidance which start in the elementary grades and continue into the junior college should not only help the student in deciding about continuance at a four-year institution but should help immeasurably in alleviating the problem of dropouts during the first two years of college. With more students staying until graduation from junior college, there would be more students eligible to continue for higher degrees.

4. Programs of study in the junior colleges should remain flexible enough to permit the offering of courses which appeal to entering students and which best meet their needs. If certain students want only two years of college to meet personal needs for cultural enrichment, then it is possible that programs can be developed which will suit them better than the first two years of a college transfer program. Such flexibility would permit a program to be tailored to the individual, without regard for upper division requirements of four-year colleges and universities.

It has been pointed out that the graduates of junior colleges represent a somewhat select group of people. They have survived the rigors of the first two years of college--usually considered the most difficult. The present study has

shown that the ones who do not continue at a four-year institution are probably as capable of succeeding in upper division as those who actually do continue. The financial returns of college education to the community, to the nation, and to the individual have been clearly demonstrated. The psychic benefits cannot be measured in any of the usual ways, but they are believed by some to be of equal or greater importance. The need for a larger and larger per cent of the population who have four years or more of college requires that every effort be made to develop fully all talent available.

Among the graduates of junior colleges there appear to be many whose talents may have been better directed. It is a task of the junior college to find out as much as possible about these students and then help them to make the most of their abilities.

BIBLIOGRAPHY

Books

Adler, Alfred. Problems of Neurosis. New York: Cosmopolitan Book Corporation, 1930.

Allport, Gordon W. Pattern and Growth in Personality, New York: Holt, Rinehart and Winston, Inc., 1961.

_____. Personality: A Psychological Interpretation. New York: Henry Holt and Company, 1937.

Beezer, Robert H. and Hjelm, Howard F. Factors Related to College Attendance. Washington: U. S. Department of Health, Education, and Welfare, 1961.

Bogue, Jesse Parker. The Community College. New York: McGraw-Hill Book Company, Inc., 1950.

Brumbaugh, A. J. and Berdie, Ralph F. Student Personnel Programs in Transition. ("American Council on Education Studies: Student Personnel Work," Series VI, No. 3.) Washington, D. C.: American Council on Education, 1952.

Buros, Oscar Krisen (ed.). The Fifth Mental Measurements Yearbook. Highland Park, N. J.: The Gryphon Press, 1959.

Butts, R. Freeman. The College Charts Its Course. New York: McGraw-Hill Book Company, Inc., 1939.

Butts, R. Freeman and Cremin, Lawrence. A History of Education in American Culture. New York: Henry Holt and Company, 1953.

Clark, Burton R. The Open Door College: A Case Study. New York: McGraw-Hill Book Company, Inc., 1960.

Cole, Charles C., Jr. Encouraging Scientific Talent. New York: College Entrance Examination Board, 1956.

College Admissions. Princeton, N. J.: College Entrance Examination Board, Educational Testing Service, 1954.

Combs, Arthur W. and Snygg, Donald. Individual Behavior: A Perceptual Approach to Behavior. New York: Harper & Brothers, 1959.

Davis, Helen E. On Getting Into College. New York: American Council on Education, 1949.

Dillon, H. J. Early School Leavers: A Major Educational Problem. New York: National Child Labor Committee, 1949.

Edwards, Allen L. Statistical Methods in the Behavioral Sciences. New York: Rinehart and Co., Inc., 1954.

Eells, Walter Crosby. The Junior College. Cambridge, Mass.: Houghton Mifflin Co., 1931.

_____. Present Status of Terminal Education. Washington: American Association of Junior Colleges, 1941.

Fields, Ralph R. The Community College Movement. New York: McGraw-Hill Book Company, Inc., 1962.

Gleazer, Edmund J., Jr. (ed.). Junior College Directory of the American Association of Junior Colleges. Washington, D. C.: American Association of Junior Colleges, 1963.

Goldsen, Rose K., et al. What College Students Think. Princeton, N. J.: D. Van Nostrand Company, Inc., 1960.

Good, Carter V. (ed.). Dictionary of Education. 2nd ed. New York: McGraw-Hill Book Company, Inc., 1959.

Gordon, Ira J. Human Development: From Birth Through Adolescence. New York: Harper & Brothers, 1962.

Havighurst, Robert J. Human Development and Education. New York: Longmans, Green and Company, 1953.

Hayward, Lynn C. BIMD Computer Programs Manual. Los Angeles: Department of Preventive Medicine and Public Health, School of Medicine, University of California, 1961.

Henninger, G. Ross. The Technical Institute in America. New York: McGraw-Hill Book Company, Inc., 1959.

Hillway, Tyrus. The American Two-Year College. New York: Harper & Brothers, 1958.

Hoel, Paul G. Introduction to Mathematical Statistics. 1st ed. New York: John Wiley & Sons, Inc., 1947.

Hollingshead, August B. Elmtown's Youth. New York: John Wiley & Sons, Inc., 1949.

Hollinshead, Byron S. Who Should Go to College. New York: Columbia University Press, 1952.

Homans, George C. The Human Group. New York: Harcourt, Brace and Company, 1950.

Jacob, Phillip E. Changing Values in College. New York: Harper & Brothers, 1957.

Johnson, B. Lamar, General Education in Action. Washington: American Council on Education, 1952.

Johnson, P. O. Statistical Methods in Research. New York: Prentice-Hall, Inc., 1949.

Kendall, Maurice G. and Buckland, William R. A Dictionary of Statistical Terms. London: Oliver and Boyd, 1957.

Kluckhohn, Clyde and Murray, Henry A. (eds.). Personality: in Nature, Society, and Culture. New York: Alfred A. Knopf, Inc., 1959.

Maslow, A. H. Motivation and Personality. New York: Harper & Brothers, 1954.

Medsker, Leland L. The Junior College: Progress and Prospect. New York: McGraw-Hill Book Company, Inc., 1960.

National Society for the Study of Education. The Public Junior College, The Fifty-fifth Yearbook of the National Society for the Study of Education, Part I. Chicago: University of Chicago Press, 1956.

Reiss, Albert J., Jr. Occupations and Social Status. New York: Free Press of Glencoe, 1961.

Sandford, Nevitt (ed.). The American College. New York: John Wiley and Sons, Inc., 1962.

Snedecor, George W. Statistical Methods. 4th ed. Ames, Iowa: The Iowa State College Press, 1946.

Stoddard, Alexander V. Education for All American Youth. Washington: Educational Policies Commission, 1944.

Strang, Ruth. The Adolescent Views Himself. New York: McGraw-Hill Book Company, Inc., 1957.

Thomas, Lawrence G. The Occupational Structure and Education. Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1956.

Thornton, James W., Jr. The Community Junior College. New York: John Wiley & Sons, Inc., 1960.

Thorpe, Louis G. and Schmuller, Allen M. Personality: An Interdisciplinary Approach. Princeton, N. J.: D. Van Nostrand Company, 1958.

Wattenberg, William W. The Adolescent Years. New York: Harcourt, Brace and Company, 1955.

West, James E., Neidt, Charles O., and Ahmann, J. Stanley. Statistical Methods in Educational and Psychological Research. New York: Appleton-Century-Crofts, Inc., 1954.

White, R. Clyde. These Will Go to College. Cleveland: The Press of Western Reserve University, 1952.

Articles and Periodicals

Alexander, Norman and Woodruff, Ruth J. "Determinants of College Success," Journal of Higher Education, XI (December, 1940), 479-485.

Browning, James C. "Research Studies and Surveys--Port Huron Junior College," Junior College Journal, XXXII, No. 1 (September, 1961), 44-46.

Coleman, James E. "Academic Achievement and the Structure of Competition," Harvard Educational Review, XXIX (Fall, 1959), 330-351.

Cummings, Edgar C. "Causes of Student Withdrawals at Depauw University," School and Society, LXX (September, 1949), 152-153.

Dressel, Paul L. "Liberal Arts Students Advised to Withdraw," Journal of Higher Education, XIV (January, 1943), 43-45.

Farnsworth, Dana L. "We're Wasting Brainpower," NEA Journal, XLVIII (March, 1959), 42-44.

Fisher, R. A. "The Precision of Discriminant Functions," Annals of Eugenics, 10:422-429; 1940.

..... "The Statistical Utilization of Multiple Measurements," Annals of Eugenics, 8:376-386; 1938.

Freedman, Mervin B. "The Passage Through College," Journal of Social Issues, XII, No. 4 (1956), 13-28.

Freehill, Maurice F. "The Cooperative English Test in Academic Counseling," College and University, XXIX (January, 1954), 244-252.

Fults, Dan A. and Taylor, Bob L. "The Staying Power of College Students," The Bulletin of the National Association of Secondary-School Principals, XLIII (October, 1959), 109-114.

Garrett, H. E. "The Discriminant Function and Its Use in Psychology," Psychometrika, 8:65-79; 1943.

Gekaski, Norman and Swartz, Solomon. "Student Mortality and Related Factors," Journal of Educational Research, LIV (January, 1961), 192-194.

Gould, Sidney C. "How Can We Help the Failing College Student?" High Points, XLV (February, 1963), 8-18.

Grace, Harry A. "Personality Factors and College Attrition," Peabody Journal of Education, XXXV (July, 1957), 36-40.

Iffert, Robert Earl. "Drop-Outs; Nature and Causes; Effects on Student, Family, and Society," Current Issues in Higher Education 1956, The Proceedings of the Eleventh Annual National Conference on Higher Education, Chicago, Ill., March 5-7, 1956 (Washington: Association for Higher Education).

Jex, Frank B. and Merrill, Reed M. "A Study in Persistence: Withdrawal and Graduation Rates at the University of Utah," Personnel and Guidance Journal, XL (May, 1962), 762-769.

Johnson, Granville B., Jr. "A Proposed Technique for the Analysis of Drop-Outs at a State College," Journal of Educational Research, XLVII (January, 1954), 381-387.

Koos, Leonard V. "Rise of the People's College," The School Review, LV (March, 1947), 138-149.

Lorge, Irving. "Two Group Comparisons by Multivariate Analysis," Official Report of the 1940 Meeting (May, 1940),

117-121. Paper read before the 1940 meeting of the American Educational Research Association at St. Louis, Missouri, February 24-27, 1940.

Pierson, Rowland R. "Age Versus Academic Success in College Students," School and Society, LXVIII (August, 1948), 94-95.

Punke, Harold H. "Sex and Equal Opportunity in Higher Education," The Bulletin of the National Association of Secondary-School Principals, XLV (November, 1961), 121-128.

Smith, Mapheus. "An Empirical Scale of Prestige Status of Occupations," American Sociological Review, VIII (April, 1943), 185-192.

Steggert, Francis X. "Terminal and University Parallel in the Illinois Junior Colleges, 1951-52." College and University, XXVIII (January, 1953), 204-209.

Tickton, Sidney G. "What's Ahead for Public Junior Colleges," Junior College Journal, XXXIV (November, 1963), 9-11.

Tiedeman, David V. and others. "The Multiple Discriminant Function--A Symposium," Harvard Educational Review, XXI (Spring, 1951), 71-95.

Young, Raymond. "Improvement Through Introspection: Are Self Studies Essential?" Junior College Journal, XXXII, No. 1 (September, 1961), 28-34.

Reports

Commission on Higher Education, Higher Education for American Democracy. A Report of the President's Commission on Higher Education. Vol. III. New York: Harper and Brothers, 1948.

"The Community Junior College in Florida's Future," Report to the State Board of Education by the Community College Council. Tallahassee, Fla.: Florida State Department of Education, 1957.

"Florida's Community Junior Colleges: Their Contributions and Their Future," A Report by the Task Force on the Junior College Student. Tallahassee, Fla.: State Junior College Advisory Board, 1962. (Mimeographed.)

Iffert, Robert E. Retention and Withdrawal of College Students. U. S. Department of Health, Education, and Welfare Bulletin 1958, No. 1. Washington: U. S. Government Printing Office, 1957.

Initial Report of the Council for the Study of Higher Education in Florida. Tallahassee, Florida: The Council for the Study of Higher Education in Florida, 1955.

McNeely, John H. College Student Mortality. U. S. Office of Education Bulletin 1937, No. 11. Washington: U. S. Government Printing Office, 1938.

U. S. Department of Commerce, Bureau of the Census. Statistical Abstract of the United States: 1961. Table No. 141.

Doctoral Dissertations

Adkins, Arlie Andrew. "Prediction of College Success at Middle Tennessee State College." Doctoral dissertation, College of Education, University of Florida, 1963.

Dissertation Abstracts. Vols. XI-XVII. Ann Arbor, Michigan: University Microfilms, Inc., 1951-1957.

Gentry, Gilbert. "The Relationship of Certain Cultural Factors to Initiative in the Local Support of Education in Florida." Doctoral dissertation, College of Education, University of Florida, 1959.

Hoffman, Charles A. "A Study in Predicting Academic Success." Doctoral dissertation, College of Education, University of Florida, 1958.

Kastner, Harold Henry, Jr. "Economic Implications of Community Junior College Education." Doctoral dissertation, College of Education, University of Florida, 1962.

Lynch, Donald Fryman. "An Analysis of Drop-Outs in Selected Public Junior Colleges of Florida." Doctoral dissertation, The Pennsylvania State University, 1959.

Potter, Edwin Everitt, Jr. "An Analysis of Attitudes of Students, Teachers, and Administrators Toward General Education Programs of Selected Junior Colleges of Florida." Doctoral dissertation, College of Education, University of Florida, 1961.

APPENDIX A

ITEM CODE FOR COLLECTION OF DATA

NAME	_____	ST. PETERSBURG	X
		PALM BEACH	X

A	Identification Number in Sample	_____
B	Age at Matriculation	_____
C	Place of Birth	_____
D	Father's Primary Occupation	_____
E	Mother's Primary Occupation	_____
F	Father's Education Level	_____
G	Mother's Education Level	_____
H	Rank in High School Graduating Class	_____
J	Date of First Matriculation	_____
K ₁	A.C.E. Psychological Examination	_____
K ₂	Cooperative English Test	_____
K ₃	Cooperative Social Studies Test	_____
K ₄	Cooperative Mathematics Test	_____
K _A	Test Battery Average	_____
L ₁	Cooperative School and College Ability Test (Verbal)	_____
L ₂	Cooperative School and College Ability Test (Quantitative)	_____
L ₃	Cooperative School and College Ability Test (Total Score)	_____
M	Final Grade Point Average	_____
N	Chief Means of Financial Support as Student	_____
O	Marital Status as Sophomore	_____
P	Number of Brothers and Sisters Older _____ Younger _____	
Q	Number of Semesters Enrolled	_____
R	Number of Semester Hours Earned	_____
S	Parents' Place of Birth Father _____ Mother _____	
T	Veteran Yes _____ No _____	
U	Did Graduate _____ Did Not Graduate _____	
V	Special Recognition for Excellence in Scholastic Work _____	

APPENDIX B

DISCRIMINANT FUNCTION COEFFICIENTS FOR 12 VARIABLES

	<u>Men</u>	<u>Women</u>
1. Age at Matriculation	-.00025035633	.00018385053
2. Socioeconomic Status	-.00003371119	.0001046637
3. Father's Education Level	-.00006367577	-.00262287070
4. Mother's Education Level	-.00036330283	.00173381640
5. SCAT (Verbal) T Score	.00021861891	-.00001953777
6. SCAT (Quantitative) T Score	-.00018889953	.00002175422
7. Final Grade Point Average	.00012745775	.00329964870
8. Financial Dependency	.00052678856	.00011636133
9. Family Responsibilities	.00079967819	.00263030570
10. Number of Brothers and Sisters	-.00036029086	-.00130477840
11. Number of Semesters Enrolled	-.00214339550	.00111962890
12. Number of Semester Hours Earned	.00003311221	.00032007514

APPENDIX C

DATA FOR CASES USED IN CALCULATING DISCRIMINANT
FUNCTION ON 12 INDICATOR VARIABLES

Case No.													Male or Female
	(1) Age at Matric.	(2) Socioec. Ind.	(3) Father's Educ.	(4) Mother's Educ.	(5) SCAT (Verbal)	(6) SCAT (Quan.)	(7) Grade Pt. Av.	(8) Finan. Dep.	(9) Family Resp.	(10) Bros. & Sis.	(11) Sem. Enr.	(12) Sem. Hrs.	
1	17	48	1	2	44.8	42.9	2.55	5	1	01	4	71	F
2	18	11	2	2	55.8	50.8	2.68	5	1	00	5	65	M
3	45	61	1	1	45.6	44.5	2.48	3	4	03	4	66	M
4	24	34	1	1	47.5	43.9	2.38	3	1	04	4	66	M
5	18	49	3	2	43.3	50.5	2.50	5	1	02	5	70	F
6	23	49	1	2	61.3	48.5	2.77	3	1	00	3	39	F
7	18	62	2	2	52.2	55.2	2.12	5	1	00	4	65	M
8	19	40	2	1	59.0	48.0	2.39	1	1	04	4	69	F
9	17	51	2	2	47.5	47.2	2.04	5	1	02	4	68	M
10	18	33	3	3	43.6	50.0	2.83	5	1	02	4	60	F
11	20	37	2	2	59.2	44.5	3.18	1	1	01	5	71	M
12	18	53	2	4	49.2	47.5	2.19	2	1	03	4	69	M
13	21	13	2	2	59.5	54.7	2.70	2	3	03	4	71	M
14	18	33	2	2	48.7	49.5	3.65	3	1	01	4	69	M
15	18	78	4	4	63.4	51.5	3.49	5	1	01	4	73	F
16	18	85	2	2	48.2	53.6	2.52	5	1	01	4	61	M
17	27	25	2	1	67.5	58.1	2.10	5	2	03	7	72	M
18	16	65	3	4	55.0	58.4	3.20	5	1	02	4	68	F
19	17	47	2	2	62.3	57.7	2.65	5	1	02	4	62	F
20	18	33	3	4	46.7	50.5	2.09	5	1	01	4	63	M
21	19	67	1	2	44.8	43.6	2.21	2	1	04	4	68	M
22	17	22	2	2	49.2	47.2	2.46	3	1	02	4	66	M
23	23	68	2	1	49.0	92.5	2.89	5	1	01	4	75	F
24	20	49	2	1	44.8	55.2	3.19	1	1	02	5	61	M
25	17	49	4	2	45.9	43.6	2.51	5	1	01	5	69	M
26	17	61	2	2	58.1	64.4	2.80	1	1	01	4	60	M
27	18	72	2	3	56.1	61.3	2.15	3	1	01	5	62	M
28	17	48	2	2	59.9	58.4	3.51	1	1	00	4	60	M
29	17	47	2	2	51.0	47.7	2.42	4	1	00	4	71	M
30	18	84	4	3	55.5	56.4	2.46	2	1	01	4	72	M

APPENDIX C--Continued

Case No.	(1) Age at Matri.	(2) Socioec. Ind.	(3) Father's Educ.	(4) Mother's Educ.	(5) SCAT (Verbal)	(6) SCAT (Quan.)	(7) Grade Pt. Av.	(8) Finan. Dep.	(9) Family Resp.	(10) Bros. & Sis.	(11) Sem. Enr.	(12) Sem. Hrs.	1-Transfers	2-Non-transfers	Male or Female
31	22	84	2	1	53.3	48.0	2.69	5	2	01	5	61	1	1	M
32	19	87	2	2	47.2	45.3	2.04	1	1	03	4	64	1	1	F
33	17	16	3	4	49.2	33.6	3.70	5	1	00	4	61	1	1	M
34	16	72	1	1	51.8	52.2	3.04	3	1	04	4	73	1	1	F
35	17	50	1	2	46.1	62.3	3.34	1	1	00	4	61	1	1	M
36	18	44	1	1	54.4	63.4	3.17	5	1	01	4	64	1	1	F
37	18	49	1	2	62.8	66.4	2.20	5	1	01	4	61	1	1	M
38	21	65	2	4	63.4	53.6	3.10	4	3	00	5	67	1	1	M
39	24	43	2	2	44.8	46.7	2.58	3	2	00	5	74	1	1	M
40	17	43	2	4	50.5	48.5	3.68	5	1	00	4	70	1	1	F
41	17	58	1	2	47.2	47.2	3.22	4	1	00	5	72	1	1	F
42	22	59	2	2	51.0	48.5	2.84	5	2	04	4	73	1	1	M
43	17	68	1	1	48.7	46.1	2.79	1	1	02	4	71	1	1	F
44	17	62	3	3	48.2	50.5	2.67	5	1	02	4	59	1	1	M
45	17	92	4	4	46.9	48.2	2.64	1	1	04	4	67	1	1	M
46	17	50	2	2	46.1	61.3	2.10	5	1	01	4	62	1	1	M
47	17	48	2	4	47.5	45.0	2.28	5	1	03	5	67	1	1	M
48	17	85	2	4	50.3	50.0	3.00	5	1	01	0	4	1	1	F
49	17	47	1	1	50.0	47.5	3.04	5	1	00	4	69	1	1	F
50	17	25	1	4	45.9	48.0	2.61	5	1	00	4	72	1	1	M
51	18	39	1	1	49.7	49.7	1.89	4	1	05	6	71	1	1	M
52	17	61	4	2	57.7	58.4	3.58	5	1	01	4	64	1	1	F
53	17	62	1	4	50.8	92.5	2.69	5	1	01	4	70	1	1	F
54	18	19	2	2	49.0	45.3	2.30	3	1	03	4	67	1	1	F
55	21	25	1	2	57.7	57.4	2.43	5	3	02	4	65	1	1	F
56	17	62	3	3	44.8	46.1	2.15	5	1	01	4	60	1	1	F
57	18	85	4	4	46.9	46.1	2.55	5	1	01	4	65	1	1	M
58	17	51	1	2	48.2	44.2	2.40	2	1	01	5	72	1	1	F
59	17	68	2	2	46.7	46.7	2.50	3	1	02	4	66	1	1	F
60	17	19	3	2	46.9	48.7	2.68	1	1	01	4	68	1	1	M
61	17	62	1	2	50.0	47.7	3.64	5	1	01	4	73	1	1	M
62	18	47	1	2	58.4	68.8	2.67	5	1	01	6	66	1	1	M
63	18	40	2	2	46.4	44.5	2.39	5	1	01	4	67	1	1	M

APPENDIX C--Continued

Case No.	(1) Age at Matri.	(2) Socioec. Ind.	(3) Father's Educ.	(4) Mother's Educ.	(5) SCAT (Verbal)	(6) SCAT (Quan.)	(7) Grade Pt. Av.	(8) Finan. Dep.	(9) Family Resp.	(10) Bros. & Sis.	(11) Sem. Enr.	(12) Sem. Hrs.	1-Transfers	2-Non-transfers	Male or Female
64	17	92	4	4	46.7	46.7	2.26	5	1	02	4	65	1	M	
65	16	66	1	2	57.7	65.5	2.61	1	1	01	4	62	1	M	
66	18	47	2	4	45.6	43.6	2.35	4	1	00	4	71	1	M	
67	18	93	4	2	62.8	51.8	2.59	5	1	01	4	61	1	M	
68	22	78	3	3	59.9	34.5	2.27	5	1	01	6	64	1	M	
69	17	78	3	2	53.6	53.6	2.58	5	1	01	4	64	1	M	
70	17	37	1	2	53.3	59.5	2.75	4	1	02	4	60	1	F	
71	22	92	4	2	46.9	43.9	2.56	1	2	00	4	64	1	M	
72	18	72	3	4	56.4	73.3	3.00	3	1	01	4	64	1	M	
73	17	47	2	2	52.5	43.6	2.38	5	1	01	5	77	1	M	
74	18	27	2	2	49.2	48.2	2.35	3	1	01	5	74	1	M	
75	42	17	1	1	51.0	46.1	2.60	1	1	04	6	61	1	F	
76	24	49	1	2	56.1	45.0	2.45	4	1	01	4	53	1	M	
77	24	49	2	2	53.6	52.3	2.67	5	2	01	4	66	1	F	
78	17	73	2	1	48.2	66.4	2.03	4	1	00	4	64	1	M	
79	17	47	1	2	40.8	59.5	2.56	5	1	01	4	62	1	M	
80	17	84	4	4	55.9	47.5	3.03	5	1	01	4	60	1	M	
81	17	16	2	1	45.9	47.2	2.53	4	1	01	5	72	1	M	
82	17	50	2	2	55.5	56.4	2.37	3	1	01	4	62	1	M	
83	17	48	1	2	53.6	51.5	2.88	5	1	01	4	63	1	M	
84	18	19	2	2	44.8	46.7	2.07	5	1	00	4	72	1	M	
85	17	78	4	3	52.2	61.0	3.28	5	1	01	4	65	1	M	
86	18	19	2	2	50.0	47.2	3.16	4	1	01	4	69	1	M	
87	17	51	1	2	52.5	50.5	2.96	5	1	02	4	64	1	M	
88	17	47	4	4	44.8	45.6	3.28	5	1	01	4	68	1	F	
89	17	59	3	2	61.3	50.0	2.33	1	1	03	5	63	1	M	
90	17	47	2	4	44.5	48.0	2.82	5	1	04	4	65	1	M	
91	17	48	2	4	43.6	49.2	2.91	5	1	01	4	67	1	M	
92	18	50	3	4	46.7	52.3	2.94	5	1	00	4	52	1	F	
93	18	44	2	2	55.0	51.5	3.35	1	1	01	4	65	1	M	
94	18	19	1	1	52.5	51.5	2.56	1	1	01	4	64	1	M	
95	17	53	3	1	52.5	59.5	3.48	3	1	01	5	63	1	F	
96	17	49	2	2	55.0	57.4	2.77	5	1	02	4	68	1	F	

APPENDIX C--Continued

Case No.	(1) Age at Matri.				(2) Socioec. Ind.		(3) Father's Educ.		(4) Mother's Educ.		(5) SCAT (Verbal)		(6) SCAT (Quan.)		(7) Grade Pt. Av.		(8) Finan. Dep.		(9) Family Resp.		(10) Bros. & Sis.		(11) Sem. Enr.		(12) Sem. Hrs.		Male or Female	
97	17	70	2	2	46.4	46.9	3.13	1	1	02	4	71	1	1	1	00	1	1	03	4	71	1	1	1	1	1		
98	17	15	2	4	45.9	49.2	2.54	3	1	00	4	71	1	1	1	02	4	4	02	4	71	1	1	1	1	1		
99	17	52	2	1	51.0	46.7	2.61	4	1	03	4	71	1	1	1	02	4	4	02	4	71	1	1	1	1	1		
100	22	44	1	1	49.5	42.3	3.29	3	1	10	4	64	1	1	1	01	4	4	02	4	64	1	1	1	1	1		
101	17	84	3	2	48.2	40.5	3.07	3	1	02	4	64	1	1	1	02	5	5	02	5	72	1	1	1	1	1		
102	20	62	3	4	46.7	52.3	2.32	1	1	02	5	72	1	1	1	04	4	4	04	4	71	1	1	1	1	1		
103	24	33	1	1	67.5	45.0	2.76	3	1	04	4	71	1	1	1	01	4	4	04	4	67	1	1	1	1	1		
104	24	41	2	1	45.6	53.6	3.14	3	2	00	4	67	1	1	1	01	4	4	01	5	74	1	1	1	1	1		
105	18	49	1	2	46.7	46.9	2.20	1	1	01	4	70	1	1	1	00	4	4	01	5	74	1	1	1	1	1		
106	18	62	1	1	44.8	58.4	3.00	3	1	01	5	74	1	1	1	01	4	4	01	5	68	1	1	1	1	1		
107	22	82	4	2	46.7	53.6	2.53	5	1	01	4	68	1	1	1	01	4	4	01	5	75	1	1	1	1	1		
108	17	39	1	3	51.3	58.8	2.23	5	2	03	5	68	1	1	1	04	5	5	04	5	75	1	1	1	1	1		
109	22	32	1	1	42.6	46.9	2.12	3	1	00	4	68	1	1	1	00	4	4	00	4	68	1	1	1	1	1		
110	17	87	2	4	46.7	45.0	2.91	5	1	00	4	68	1	1	1	00	4	4	00	4	68	1	1	1	1	1		
111	22	65	4	3	43.3	41.6	2.25	5	1	01	4	63	1	1	1	00	4	4	01	4	63	1	1	1	1	1		
112	18	25	1	1	61.3	53.6	2.68	2	1	03	6	69	1	1	1	02	4	4	02	4	65	1	1	1	1	1		
113	18	84	1	1	70.5	58.1	2.77	5	1	02	4	65	1	1	1	01	4	4	02	4	62	1	1	1	1	1		
114	17	66	2	2	55.0	53.6	3.21	3	1	01	4	62	1	1	1	01	4	4	01	4	61	1	1	1	1	1		
115	18	49	1	2	66.4	53.6	2.77	5	1	02	4	61	1	1	1	01	4	4	02	4	61	1	1	1	1	1		
116	17	50	3	3	54.4	61.3	2.31	5	1	02	4	59	1	1	1	02	4	4	02	4	59	1	1	1	1	1		
117	17	47	2	1	46.7	50.0	2.24	5	1	02	5	62	1	1	1	02	5	5	02	5	62	1	1	1	1	1		
118	54	49	2	2	61.3	50.0	2.89	1	2	01	4	65	1	1	1	01	4	4	01	4	64	1	1	1	1	1		
119	33	51	1	1	51.0	64.1	2.74	3	1	03	5	64	1	1	1	03	5	5	03	5	64	1	1	1	1	1		
120	18	79	4	2	47.7	44.5	2.32	5	1	02	4	68	1	1	1	02	4	4	02	4	68	1	1	1	1	1		
121	18	87	2	2	50.0	49.2	3.55	4	1	02	4	67	1	1	1	02	4	4	02	4	67	1	1	1	1	1		
122	17	66	3	2	59.2	57.4	3.20	5	1	01	4	69	1	1	1	01	4	4	01	4	69	1	1	1	1	1		
123	21	49	2	2	64.8	51.8	2.03	5	1	00	7	80	1	1	1	00	7	7	00	7	80	1	1	1	1	1		
124	19	21	2	2	48.5	48.5	2.46	2	1	02	4	72	1	1	1	01	4	4	02	4	72	1	1	1	1	1		
125	17	68	2	2	45.6	45.6	2.25	5	1	01	4	71	1	1	1	01	4	4	01	4	71	1	1	1	1	1		
126	17	87	4	2	49.7	41.2	2.12	4	1	01	4	68	1	1	1	01	4	4	01	4	68	1	1	1	1	1		
127	22	49	3	2	55.0	46.1	3.10	5	1	02	2	30	1	1	1	02	2	2	02	2	30	1	1	1	1	1		
128	17	34	4	4	49.5	44.8	2.43	3	1	02	4	69	1	1	1	02	4	4	02	4	69	1	1	1	1	1		
129	17	50	2	2	44.8	43.6	2.22	5	1	01	4	64	1	1	1	01	4	4	01	4	64	1	1	1	1	1		
130	17	47	1	2	53.6	56.1	2.36	2	1	01	5	59	1	1	1	01	5	5	01	5	59	1	1	1	1	1		

APPENDIX C--Continued

APPENDIX C--Continued

Case No.	(1) Age at Matri.	(2) Socioec. Ind.	(3) Father's Educ.	(4) Mother's Educ.	(5) SCAT (Verbal)	(6) SCAT (Quan.)	(7) Grade Pt. Av.	(8) Finan. Dep.	(9) Family Resp.	(10) Bros. & Sis.	(11) Sem. Enr.	(12) Sem. Hrs.	1-Transfers 2-Non-transfers	Male or Female
164	18	26	1	2	48.5	49.0	2.42	5	1	02	4	69	1	F
165	24	49	1	2	52.5	47.5	2.19	5	2	02	4	70	1	M
166	18	61	2	2	47.2	49.0	2.81	5	1	01	4	67	1	M
167	19	50	1	2	45.0	44.2	2.02	5	1	04	4	65	1	M
168	26	44	1	2	52.2	64.8	2.39	1	1	01	4	62	1	M
169	18	51	1	2	57.7	50.0	3.36	5	1	11	4	61	1	M
170	17	48	1	2	45.9	44.8	2.86	5	1	00	4	67	1	F
171	17	44	3	4	55.0	50.5	2.38	3	1	02	4	63	1	M
172	18	70	2	4	53.6	53.6	2.80	5	1	01	5	64	1	F
173	17	11	1	1	43.3	59.9	2.07	5	1	08	6	69	1	M
174	18	84	1	2	57.7	49.5	2.34	5	1	00	4	59	1	M
175	38	27	1	1	70.5	64.1	3.17	3	4	00	4	71	1	M
176	20	62	2	1	47.5	48.2	3.40	1	1	03	3	20	1	M
177	17	47	2	3	45.6	41.6	2.34	4	1	01	4	61	1	F
178	21	47	2	2	48.2	49.5	2.26	1	1	07	2	34	1	M
179	21	85	1	1	47.5	45.0	2.24	5	1	01	5	62	1	M
180	17	65	2	2	47.5	47.2	2.35	1	1	01	4	71	1	M
181	17	44	2	1	44.5	49.0	2.34	5	1	00	4	72	1	M
182	23	72	3	4	53.6	46.1	2.11	3	1	00	7	72	1	M
183	17	45	4	4	43.6	45.0	2.79	3	1	06	4	61	1	M
184	17	62	4	2	59.9	46.9	2.54	3	1	01	4	61	1	M
185	17	47	3	3	53.3	55.2	2.93	5	1	01	4	67	1	M
186	17	27	1	2	61.8	47.7	2.68	5	1	00	4	68	1	M
187	17	23	1	3	49.0	46.9	3.38	4	1	03	4	69	1	F
188	17	19	1	4	49.5	45.3	2.65	5	1	01	4	71	1	F
189	17	47	1	2	59.9	55.2	3.44	3	1	02	4	61	1	F
190	17	37	2	2	47.7	48.0	2.56	3	1	02	4	70	1	M
191	17	19	1	2	46.9	49.5	3.06	4	1	04	5	72	1	F
192	17	62	1	1	53.3	54.7	3.68	1	1	01	5	66	1	M
193	18	33	2	2	48.2	46.7	2.74	5	1	01	2	66	1	F
194	18	17	1	2	51.5	45.0	3.89	1	1	00	4	64	1	F
195	16	49	4	2	50.0	46.1	3.68	5	1	03	4	64	1	M

APPENDIX C--Continued

APPENDIX C--Continued

Case No.															
	(1) Age at Matric.	(2) Socioec. Ind.	(3) Father's Educ.	(4) Mother's Educ.	(5) SCAT (Verbal)	(6) SCAT (Quan.)	(7) Grade Pt. Av.	(8) Finan. Dep.	(9) Family Resp.	(10) Bros. & Sis.	(11) Sem. Enr.	(12) Sem. Hrs.	1-Transfers	2-Non-transfers	Male or Female
229	18	47	2	2	48.0	45.9	2.94	5	1	05	4	64	1		M
230	18	50	3	3	57.4	55.2	2.55	1	1	01	5	62	1		M
231	17	62	2	2	50.0	56.4	2.44	1	1	01	4	66	1		F
232	17	23	1	2	43.9	39.6	2.11	3	1	02	4	72	1		M
233	18	49	2	2	46.1	48.7	2.21	5	1	00	5	70	1		M
234	21	62	2	4	63.4	73.3	3.18	5	1	03	4	65	1		M
235	18	81	4	1	49.5	51.5	2.84	3	1	05	4	62	1		M
236	20	14	4	2	46.4	44.5	2.84	1	2	02	5	68	1		M
237	21	61	1	1	48.7	56.4	3.05	4	1	02	5	65	1		M
238	17	61	1	1	45.9	48.2	2.82	3	1	01	5	72	1		M
239	17	90	4	3	63.4	67.5	3.73	4	1	08	4	67	1		F
240	16	47	2	1	48.5	49.5	2.77	3	1	01	4	64	1		M
241	18	34	2	2	48.7	45.0	2.17	4	1	01	6	67	1		M
242	20	51	4	4	57.7	57.4	2.78	1	1	04	4	64	1		M
243	18	54	2	2	52.5	61.3	2.33	1	1	03	4	60	1		M
244	16	36	1	2	44.5	49.2	2.27	5	1	01	5	70	1		M
245	18	14	1	2	46.7	53.6	2.30	5	1	01	6	63	1		M
246	19	37	1	1	45.0	37.7	2.68	3	1	02	4	68	1		F
247	18	44	1	4	55.5	56.4	2.52	5	1	01	3	50	1		F
248	17	68	2	2	51.3	58.4	2.78	1	1	02	5	63	1		F
249	17	64	2	2	45.3	44.5	2.09	3	1	02	4	67	1		M
250	18	52	2	2	51.0	55.2	3.31	1	1	03	4	61	1		M
251	17	47	3	2	48.2	43.3	3.26	3	1	01	4	70	1		M
252	17	44	1	1	43.9	42.6	1.96	5	1	01	5	70	1		F
253	16	18	1	2	67.5	59.2	2.85	5	1	01	4	68	1		M
254	17	66	1	3	66.4	53.6	3.44	4	1	00	4	68	1		F
255	17	70	4	4	63.4	62.3	3.15	5	1	00	4	64	1		F
256	17	60	4	1	31.4	31.3	2.56	5	1	00	4	68	1		M
257	23	25	1	2	56.7	62.3	2.43	5	2	03	5	67	1		M
258	17	84	3	3	66.4	66.4	2.45	4	1	01	4	60	1		M
259	17	34	1	1	48.0	47.5	3.17	5	1	01	5	69	1		F
260	17	53	2	1	45.9	48.2	2.83	5	1	02	4	71	1		R

APPENDIX C--Continued

Case No.	(1) Age at Matric.				(2) Socioec. Ind.	(3) Father's Educ.	(4) Mother's Educ.	(5) SCAT (Verbal)	(6) SCAT (Quan.)	(7) Grade Pt. Av.	(8) Finan. Dep.	(9) Family Resp.	(10) Bros. & Sis.	(11) Sem. Enr.	(12) Sem. Hrs.	1-Transfers 2-Non-transfers	Male or Female
261	17	32	2	2	56.4	52.3	2.76	3	1	01	4	70	1	M			
262	18	62	2	1	50.8	43.6	2.35	1	1	00	4	63	1	F			
263	17	65	2	3	44.2	57.1	2.16	4	1	00	4	64	1	F			
264	17	72	4	2	44.8	43.9	2.16	3	1	01	4	64	1	M			
265	17	33	2	1	46.1	44.5	2.25	1	1	01	4	69	1	M			
266	18	59	3	3	65.5	51.8	2.14	1	1	02	5	65	1	M			
267	16	14	4	4	54.4	59.5	3.27	5	1	00	5	70	1	F			
268	18	19	1	1	48.0	46.7	3.71	1	1	02	3	35	1	F			
269	17	32	1	1	56.7	65.5	2.74	5	1	02	4	66	1	F			
270	17	52	3	4	53.3	64.8	2.63	5	1	00	4	64	1	M			
271	17	62	2	2	47.7	47.2	2.90	3	1	00	4	67	1	M			
272	18	44	4	3	61.0	62.3	2.34	5	1	01	4	64	1	F			
273	17	64	4	2	57.7	57.4	2.18	5	1	00	4	65	1	F			
274	20	59	2	2	45.9	48.7	2.30	3	1	01	3	47	1	M			
275	23	62	2	2	67.5	39.6	3.38	3	3	00	2	29	1	M			
276	24	56	1	2	42.6	46.1	2.33	4	2	01	5	72	1	M			
277	17	50	2	3	43.3	45.9	2.81	3	1	02	4	67	1	F			
278	18	49	1	1	53.3	47.5	2.49	3	1	01	6	63	1	M			
279	17	68	4	3	59.2	57.4	2.47	3	1	02	4	64	1	M			
280	17	17	2	2	59.2	58.4	2.88	5	1	01	4	68	1	M			
281	18	79	2	2	49.7	42.6	2.28	5	1	01	4	65	1	M			
282	23	78	2	2	49.7	47.5	3.12	3	4	01	4	66	1	M			
283	17	84	4	2	48.5	42.9	2.38	5	1	01	4	65	1	F			
284	24	44	2	2	50.8	47.5	2.24	1	1	04	4	59	1	M			
285	19	84	1	2	52.5	46.1	2.65	1	1	04	4	60	1	F			
286	17	66	2	4	46.1	62.3	2.32	3	1	02	4	62	1	F			
287	17	49	2	2	46.7	46.7	2.36	5	1	01	4	67	1	M			
288	17	62	1	4	98.1	89.5	2.73	5	1	02	4	64	1	M			
289	24	48	1	2	65.5	40.5	2.48	1	1	00	8	76	1	M			
290	17	49	3	3	45.6	57.4	2.79	4	1	02	4	61	1	M			
291	18	49	1	3	57.4	51.8	2.54	3	1	01	5	65	1	M			
292	17	32	2	2	40.5	44.5	2.46	5	1	04	4	61	2	F			
293	18	68	2	1	48.7	47.7	2.14	5	1	00	4	66	2	M			

APPENDIX C--Continued

Case No.	(1) Age at Matric.				(2) Socioec. Ind.				(3) Father's Educ.				(4) Mother's Educ.				(5) SCAT (Verbal)				(6) SCAT (Quan.)				(7) Grade Pt. Av.				(8) Finan. Dep.				(9) Family Resp.				(10) Bros. & Sis.				(11) Sem. Enr.				(12) Sem. Hrs.				1-Transfers	2-Non-transfers	Male or Female
294	18	59	4	2	42.6	46.1	2.14	5	1	01	4	59	2	M	F	M	M	M	68.8	61.0	2.65	1	2	03	3	55	1	01	4	68	2	2	2	2																	
295	17	68	4	2	50.5	49.2	3.66	5	1	01	4	68	2	M	F	M	M	M	37.7	42.3	2.20	1	1	03	5	62	2	2	2	2	2																				
296	47	47	1	2	70.5	64.1	3.15	5	1	02	2	32	2	M	M	M	M	M	43.6	47.5	2.23	5	1	01	7	101	2	2	2	2																					
297	19	22	1	1	37.7	42.3	2.20	5	1	03	5	62	2	M	M	M	M	M	64.8	66.4	2.50	3	1	01	4	56	2	2	2	2																					
298	18	39	1	2	64.8	66.4	2.50	5	1	01	7	101	2	M	M	M	M	M	47.5	52.5	2.94	5	1	04	5	60	2	2	2	2																					
299	18	62	3	3	43.6	47.5	2.23	5	1	04	5	60	2	M	F	M	M	M	68.8	61.0	2.65	1	2	03	3	55	1	01	4	68	2	2																			
300	41	14	1	1	68.8	61.0	2.65	1	2	03	3	55	2	M	F	M	M	M	58.4	62.8	2.57	1	1	01	4	61	2	2	2	2																					
301	17	68	3	1	58.4	62.8	2.57	1	1	01	4	61	2	M	M	M	M	M	56.9	44.8	2.13	5	1	05	7	81	2	2	2	2																					
302	18	51	1	2	56.9	44.8	2.13	5	1	03	4	61	2	M	F	M	M	M	41.9	43.6	2.39	4	1	03	4	61	2	2	2	2																					
303	17	14	1	1	51.5	46.9	2.22	5	1	03	4	63	2	M	F	M	M	M	51.5	55.2	2.95	5	1	00	4	64	2	2	2	2																					
304	17	24	2	2	62.3	55.2	2.95	5	1	03	4	63	2	M	F	M	M	M	47.2	52.5	2.94	5	1	02	4	63	2	2	2	2																					
305	17	15	3	2	55.2	52.5	2.94	5	1	00	4	64	2	M	F	M	M	M	50.0	57.4	2.34	5	1	01	4	66	2	2	2	2																					
306	17	47	2	4	52.5	52.5	2.94	5	1	02	4	63	2	M	F	M	M	M	46.4	50.0	2.52	5	1	01	4	64	2	2	2	2																					
307	19	66	4	1	54.4	54.7	2.44	1	1	04	4	62	2	M	F	M	M	M	44.5	47.7	2.97	3	1	01	4	70	2	2	2	2																					
308	17	93	4	2	55.0	57.4	2.34	5	1	01	4	66	2	M	F	M	M	M	49.1	52.5	2.29	5	1	01	4	66	2	2	2	2																					
309	17	50	1	1	46.4	50.0	2.52	5	1	01	4	64	2	M	F	M	M	M	47.2	52.5	2.43	5	1	00	4	68	2	2	2	2																					
310	18	49	1	4	44.5	47.7	2.97	3	1	01	4	70	2	M	M	M	M	M	39.6	43.3	2.41	5	1	00	4	67	2	2	2	2																					
311	22	25	1	1	44.8	47.5	2.29	5	1	10	5	63	2	M	M	M	M	M	55.5	62.3	2.63	2	1	01	5	64	2	2	2	2																					
312	21	48	1	1	55.5	62.3	2.63	2	1	01	5	64	2	M	M	M	M	M	44.8	47.5	2.43	5	1	03	3	21	2	2	2	2																					
313	23	62	4	4	44.8	47.5	2.43	5	1	03	3	21	2	M	F	M	M	M	41.9	43.3	2.41	5	1	00	4	68	2	2	2	2																					
314	17	72	4	2	41.9	43.3	2.41	5	1	01	4	67	2	M	F	M	M	M	48.7	39.6	3.01	5	1	01	4	67	2	2	2	2																					
315	17	60	2	3	48.7	39.6	3.01	5	1	01	4	67	2	M	F	M	M	M	44.8	45.6	2.27	1	1	01	4	64	2	2	2	2																					
316	18	39	2	2	44.8	45.6	2.27	1	1	01	4	64	2	M	F	M	M	M	65.5	57.4	3.27	5	1	01	4	65	2	2	2	2																					
317	18	78	2	3	47.2	42.3	2.78	3	1	00	5	68	2	M	F	M	M	M	42.6	46.7	2.18	5	1	01	4	66	2	2	2	2																					
318	18	49	2	2	42.6	46.7	2.18	5	1	00	5	68	2	M	F	M	M	M	52.5	64.1	2.19	5	1	02	4	61	2	2	2	2																					
319	17	39	2	2	42.6	46.7	2.18	5	1	01	4	66	2	M	F	M	M	M	47.7	45.3	3.00	1	1	01	4	64	2	2	2	2																					
320	21	25	4	4	52.5	64.1	2.19	5	1	02	4	61	2	M	M	M	M	M	34.5	46.1	1.95	5	1	03	4	64	2	2	2	2																					
321	17	47	2	2	52.5	64.1	2.19	5	1	03	4	64	2	M	F	M	M	M	64.8	73.3	3.63	3	1	02	4	63	2	2	2	2																					
322	17	19	1	1	64.8	73.3	3.63	3	1	02	4	63	2	M	F	M	M	M	65.5	61.3	2.90	1	2	00	3	30	2	2	2	2																					
323	47	62	2	2	65.5	61.3	2.90	1	2	00	3	30	2	M	F	M	M	M	47.1	43.9	2.68	2	1	00	4	69	2	2	2	2																					
324	18	47	1	2	45.9	43.9	2.68	2	1	00	4	69	2	M	F	M	M	M	64.8	53.6	3.07	5	1	02	4	64	2	2	2	2																					
325	20	43	2	1	64.8	53.6	3.07	5	1	02	4	64	2	M	F	M	M	M	47.7	45.3	3.00	1	1	01	4	64	2	2	2	2																					
326	16	84	4	4	47.7	45.3	3.00	1	1	01	4	64	2	M	M	M	M	M	47.7	45.3	3.00	1	1	01	4	64	2	2	2	2																					

APPENDIX C--Continued

APPENDIX C--Continued

Case No.	(1) Age at Matric.				(5) SCAT (Verbal)	(6) SCAT (Quan.)	(7) Grade Pt. Av.	(8) Finan. Dep.	(9) Family Resp.	(10) Bros. & Sis.	(11) Sem. Enr.	(12) Sem. Hrs.	1-Transfers 2-Non-transfers	Male or Female
	(2) Socioec. Ind.	(3) Father's Educ.	(4) Mother's Educ.	(1) Age at Matric.										
361	17	65	2	56.1	54.7	2.72	4	1	02	4	61	2		
362	17	66	3	45.6	41.6	2.07	5	1	01	4	68	2		
363	17	32	3	59.5	57.1	3.95	1	1	02	4	64	2		
364	17	33	1	48.2	56.1	2.95	3	1	02	4	64	2		
365	17	47	2	49.2	56.4	2.38	5	1	00	4	60	2		
366	17	90	4	52.2	52.5	2.42	5	1	02	4	60	2		
367	18	72	4	59.9	42.3	2.70	3	2	02	4	40	2		
368	17	72	4	53.6	53.6	2.74	5	1	01	4	66	2		
369	18	68	1	49.2	44.8	2.19	3	1	06	4	64	2		
370	17	47	1	46.1	45.9	2.49	5	1	01	4	67	2		
371	17	56	1	52.5	51.8	2.48	5	1	01	4	64	2		F
372	18	16	1	64.1	70.5	2.17	1	1	01	5	63	2		M
373	17	37	1	47.5	64.8	2.38	5	1	02	4	61	2		F
374	18	19	1	42.6	59.5	2.29	1	1	03	5	63	2		M
375	18	20	1	46.1	46.7	2.53	5	1	02	4	68	2		F
376	18	79	2	51.3	59.5	2.46	3	1	01	4	59	2		F
377	17	87	2	46.7	40.1	2.14	5	1	02	4	71	2		M
378	17	34	2	46.7	58.8	2.77	1	1	03	4	61	2		M
379	22	44	1	52.5	43.3	2.35	5	1	03	5	68	2		M
380	17	16	2	43.9	41.6	2.17	1	1	02	4	64	2		M
381	18	33	3	47.7	48.0	3.52	4	1	03	4	66	2		F
382	17	85	2	61.3	56.1	3.38	5	1	03	4	63	2		F
383	18	47	2	46.4	46.7	2.24	1	1	01	4	67	2		F
384	17	87	2	46.1	52.5	2.70	5	1	02	4	61	2		F
385	20	62	3	50.0	44.2	2.47	5	1	00	4	62	2		M
386	17	68	1	57.4	48.0	3.12	4	1	02	4	60	2		F
387	17	18	2	58.1	73.3	3.44	5	1	01	4	62	2		M
388	17	50	2	43.3	47.2	2.40	4	1	04	4	67	2		M
389	17	66	4	55.0	42.3	2.57	5	1	02	4	60	2		M
390	19	15	3	44.5	46.1	2.43	1	1	03	5	74	2		M

APPENDIX C--Continued

Case No.	(1) Age at Matric.				(2) Socioec. Ind.				(3) Father's Educ.				(4) Mother's Educ.				(5) SCAT (Verbal)				(6) SCAT (Quan.)				(7) Grade Pt. Av.				(8) Finan. Dep.				(9) Family Resp.				(10) Bros. & Sis.				(11) Sem. Enr.				(12) Sem. Hrs.				Male or Female	
391	20	62	2	1	46.7	46.1	2.36	5	1	05	5	66	2																																					
392	16	16	2	2	48.2	46.1	2.30	5	1	00	5	67	2																																					
393	29	58	1	1	64.8	73.3	3.78	1	4	01	5	74	2																																					
394	18	68	4	4	64.8	58.4	3.11	3	1	00	4	61	2																																					
395	17	96	4	2	55.8	50.8	2.07	5	1	01	4	61	2																																					
396	18	90	4	3	73.3	67.5	2.87	1	1	02	4	65	2																																					
397	17	50	2	1	48.2	56.1	2.84	5	1	03	4	62	2																																					
398	17	49	4	4	50.3	49.0	3.53	5	1	00	4	70	2																																					
399	18	47	2	2	46.1	45.0	2.32	5	1	05	3	50	2																																					
400	17	47	2	1	44.8	57.4	2.16	5	1	03	4	60	2																																					
401	20	43	1	2	43.6	52.5	2.41	1	1	01	5	60	2																																					
402	17	54	2	1	45.0	44.2	2.14	5	1	01	4	64	2																																					
403	19	51	2	2	44.8	40.5	2.26	3	1	02	5	77	2																																					
404	16	96	4	2	65.5	64.8	3.91	1	1	00	4	64	2																																					
405	17	65	4	4	44.2	53.6	2.31	5	1	02	4	62	2																																					
406	18	59	4	3	50.8	46.1	3.77	5	1	00	4	64	2																																					
407	17	48	2	2	45.6	41.2	2.30	5	1	03	4	67	2																																					
408	19	19	1	3	48.7	46.4	2.50	1	1	00	6	76	2																																					
409	21	44	3	2	40.5	56.1	3.52	3	1	03	6	71	2																																					
410	17	61	1	2	47.5	48.7	3.43	5	1	04	4	68	2																																					
411	17	47	3	2	57.4	64.1	2.50	3	1	01	4	62	2																																					
412	18	51	1	1	47.2	47.5	2.72	5	1	00	4	65	2																																					
413	17	66	2	3	38.2	32.5	1.92	5	1	02	4	64	2																																					
414	17	68	1	1	56.7	58.8	3.30	1	1	02	5	60	2																																					
415	24	70	1	1	42.6	58.4	2.59	5	2	03	5	56	2																																					
416	17	50	2	1	57.7	49.5	3.06	4	1	03	4	64	2																																					
417	17	51	2	2	49.5	50.0	2.27	2	1	01	4	66	2																																					
418	17	47	2	2	59.2	45.0	2.64	5	1	02	4	67	2																																					
419	17	54	2	2	46.7	50.2	2.30	3	1	00	5	61	2																																					

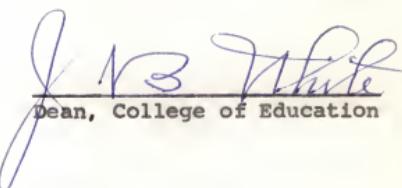
BIOGRAPHICAL SKETCH

Leland Ross Cooper was born September 13, 1926, at Greenville, South Carolina. He was graduated from Travelers Rest High School in June, 1943. He served in the Army of the United States during the years 1945 and 1946 and was stationed in the Pacific Theater and in Japan. Following his discharge from the Army, he attended Clemson College and received the degree of Bachelor of Science from that institution in February, 1950. After a period of teaching in the public schools of South Carolina, he worked in the Durham County, North Carolina, school system as teacher and director of audio-visual education. While there, he began study at the University of North Carolina and in June, 1957, received the degree of Master of Education. In September, 1958, he became a member of the faculty of Appalachian State Teachers College, where he remained until leaving to pursue his work toward the degree of Doctor of Education in 1960. From 1962 until the present time he has been a member of the faculty of Central Florida Junior College at Ocala, Florida.

Leland Ross Cooper is married to the former Mary Lee Lambert and is the father of one daughter, Cathy. He is a member of Phi Delta Kappa and Kappa Delta Pi.

This dissertation was prepared under the direction of the chairman of the candidate's supervisory committee and has been approved by all members of that committee. It was submitted to the Dean of the College of Education and to the Graduate Council, and was approved as partial fulfillment of the requirements for the degree of Doctor of Education.

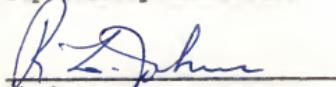
June 18, 1964

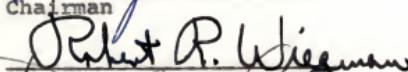


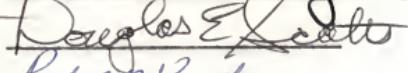
J. V. B. White
Dean, College of Education

Dean, Graduate School

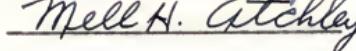
Supervisory Committee:



R. L. John
Chairman


Robert R. Wiegman


Douglas E. Scott


Ralph B. Kimbrough


Mell H. Cutchey